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GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

NOTICE TO SUBSCRIBERS

Consequent on the paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list and will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions

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We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE *possesses the necessary permit and facilities for such dispatch. We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas*

TO CALLERS AND TELEPHONERS

Until further notice our office hours are :
Mondays to Fridays 9.30 a.m. till 5 p.m.
The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Railways Post-War Policy

THE speeches by the Chairmen of the four main-line railway companies at their annual general meetings are analysed in an article in *The Economist*. The author of that article finds that, read in conjunction with a certain insistence on the standard revenue, and the call for all than purely local road transport to be organised as a public service, the speeches suggest insistence on improving the financial position of the lines by regulation rather than in the overall efficiency of national transport. He also doubts whether it is useful to discuss the net revenue of the railways, except against a background of the general level of prices and the technical improvement which it is legitimate to expect. Pointing out that the wartime remuneration of the lines is well above the average for the pre-war decade, he argues that it was ridiculous in 1944 to insist on the sanctity of the standard revenue figure, which is based on the results of a period 31 years ago. Since then there has been the whole development of road traffic, which has transformed the economic position of the railways, and there have been changes in price levels. The article in *The Economist* described the standard revenue as " this example of industrial mortmain," and says it is time it was laid to rest.

Sir Follett Holt

The death, at the age of 78, of Sir Follett Holt removes an outstanding figure from Anglo-Argentine railway affairs, in which for many years he had wielded wide influence. Sir Follett Holt had his original railway training in the Nine Elms Works of the old London & South Western Railway, and after serving for two years with Sir Alexander Rendel, Consulting Engineer, he went to Argentina as an assistant in the Locomotive Department of the Buenos Ayres & Rosario Railway, of which company he became Acting Superintendent. He gained experience with other South American railways before returning to London in 1910 on being elected a director of the Entre Rios. In that year, too, he became an original director of Transport (1910) Limited, the company which is the proprietor of *The Railway Gazette*. In later years he was a director of a number of South American and other companies, as is shown in his biography on page 316. He relinquished the Chairmanships of the Buenos Ayres Great Southern and Buenos Ayres Western Railway Companies in January, 1941; but at the time of his death was on the boards of the Entre Rios and Argentine North Eastern Railway Companies, and many others. Few men achieved such distinction in Anglo-Argentine railway affairs as Sir Follett Holt and few have done so much for the cause of Anglo-Argentine friendship.

Mr. J. B. Eastman

Since 1941 we have watched the measures taken by the Office of Defense Transportation to ensure that U.S.A. traffic is kept moving with dispatch and in adequate volume. President Roosevelt created this agency to guide and direct the operations of all domestic carriers by rail, road, inland waterway, pipeline, coastal shipping and air. Mr. Joseph B. Eastman, then Chairman of the Interstate Commerce Commission, whose death is recorded on page 315, was appointed Director and applied himself to organising the department and controlling the activities of its staff, which numbers over 1,500, assigned to 13 different divisions of transport work. For 25 years Mr. Eastman had taken a prominent part in U.S.A. transport affairs. In 1919 he was appointed a member of the Interstate Commerce Commission, and soon became known for his forcible expression of opinion. He served as Federal Co-ordinator of Transportation from 1933 to 1936. During these years he did much research on transport problems, and in the last two and a half years his attitude towards the railways was friendly and helpful: he repeatedly expressed high praise for their wartime performance. In him America has lost a zealous public servant of undoubted ability.

Twenty-five Years of " Modern Transport "

Twenty-five years have passed since the first number of *Modern Transport* was published on March 22, 1919, and this Silver Jubilee has been marked by congratulatory messages to our contemporary from the Minister of War Transport and many other eminent readers representative of railways, road transport, air-transport, shipping, and associated industries. We tender our own good wishes to *Modern Transport* and wish it " many happy returns of the day." Lord Leathers points out that its founder went a step further than the Government of his day, as he set himself the task of treating transport by land, sea, and air as a whole, whereas the old Ministry of Transport was more circum-

scribed in its duties. As a matter of fact that was not the fault of the first Minister of Transport, Sir Eric Geddes, whose ambition knew no bounds. The first title selected for his office was Minister of Ways & Communications, and besides being in control of all forms of transport whether by rail, road, sea, or air, he was also to supersede the Postmaster General. The founder of *Modern Transport*, Frederick Charles Coleman, took transport co-ordination as his theme, and since his untimely death, nine years ago, his widow, undaunted by her misfortune, has directed the business along the same lines of policy, assisted by a competent editorial staff. The major emphasis, so far, has been placed on rail and road transport. On page 307 we reproduce our own "genealogical" table from our Centenary issue in May, 1935, and it is worthy of passing reference that our constituent *Transport* was begun in 1892, with the similar intention of dealing with all forms of transport including docks and harbours. Although then there were not the seven major forms of transport discussed in one of our editorial articles this week, the spirit of commercial competition was then a very live force. Apparently the Editor found the task of serving so many masters with their conflicting interests too strenuous and so it gradually became a purely railway paper.

Irish Board of Works Recalled

The recent death of Mr. George E. Shanahan, the last Assistant Secretary to the Irish Board of Works, serves to recall the important part played by that body in the development of light railway and tramway communications in the poorer districts of Ireland which was so sedulously fostered by the British Government. After the creation of the Irish Free State in 1922 the Board was continued as a Government department there under the Ministry of Industry & Commerce. In Northern Ireland it ceased to function after the Government of Northern Ireland was constituted in 1920, since which date the responsibility for public works, etc., in Northern Ireland devolved upon the Public Works & Buildings Department in the Ministry of Finance, Northern Ireland. Mr. Shanahan began his career about the year 1872 on the Newry & Armagh Railway, which was purchased in 1879 by the Great Northern Railway Company (Ireland). In 1893 he was appointed Assistant to the General Manager, the late Mr. Thomas Robertson, and when, in 1896, Mr. Robertson was appointed Chairman of the Board of Works, Mr. Shanahan became Assistant Secretary, and held that position until he retired in 1921. He was appointed Secretary of the Vice-Regal Commission on Irish Railways which reported in 1910. For many years prior to his death Mr. Shanahan was Hon. Treasurer of the Statistical & Social Inquiry Society of Ireland.

Canadian Pacific Results

In consequence of the directors' proposal to pay a dividend for 1943 of 2 per cent. (50 cents on each $25 share) on the ordinary capital—the first distribution on this capital since the payment of 5 per cent. for 1931—the preliminary statement of results is of particular interest. While gross earnings increased by $40,243,700, expenses and taxes advanced by $39,219,822, and the net earnings of $49,211,567 were only $1,023,878 higher. There was an improvement, however, of $409,717 in "other income," and fixed charges were reduced by $1,159,667 and interest on "S00" bonds by $35,189, so that the net income of $42,982,718 was higher by $2,628,451. It has been the policy of the directors in the past few years to reduce fixed charges in order to provide for maturing obligations and essential capital improvements, bearing in mind also the unpredictable financial requirements of the post-war period. In 1940 these charges amounted to $25,380,715. They have now been reduced to $21,795,836, but are still higher than for the pre-depression period, and the directors are anxious to reduce them at least to that level, which was $19,159,865 in 1930, and $16,149,002 in 1929. The ordinary dividend now declared requires $6,700,000 and is well covered by the earnings available.

British Railway Investments in Cuba

Practically all the British money invested in Cuba is concerned with the railways. The total amount quoted on the London Stock Exchange at the end of last year was £26,943,905, of which £26,212,665 related to railways, and on this latter sum £441,038, or 1·8 per cent., was paid in interest. The return for the previous year was 1 per cent., and, as during last year, no interest was receivable by £22,602,383 of capital. Improved conditions in the sugar industry, which comprises the main traffic of the railways, is responsible for the better showing being made by the railway companies. *The South American Journal*, which compiles statistics of investments in Latin-American countries, points out that the prosperity of the railways in Cuba is dependent on the well-being of the sugar industry, and that this can be seen clearly from the fact that the average railway yield, after having been over 4 per cent. before the sugar slump began in 1927, was below 1 per cent. from 1932 to 1942. Last year as much as 86 per cent. of the railway investments received no interest.

Bulk Conveyance of Coal by Road

It has long been accepted that the bulk conveyance of coal is a form of transport peculiar to railway and waterway, and normally has not been considered a practical proposition for road transport. One reason for this is that coal from the pit to the main distribution centre or port is following a fixed route, and therefore is peculiarly suited to conveyance along a fixed track; it was the wagonway built for such traffic that provided the germ of the public railway. Different conditions have arisen now that open-cast coal workings are being developed, for these are not rail connected, and their life is too short to justify the provision of temporary railways, especially in view of the shortage of materials. Road vehicles are being used for the first time in this country (at any rate since the eighteenth century) to move coal from the coal face. As we record elsewhere they are moving it at the rate of 100,000 tons a week, and this figure is expected to rise to 500,000 tons as the weather improves and workings are extended. The fleet of more than 750 road vehicles now being used will eventually total about 4,000. Journeys to railheads average about five miles, but those giving direct delivery to consumers extend up to 50 miles. In most cases the provision of the road vehicles is the responsibility of the Government Road Haulage Organisation. Temporary roads to give access to these coal workings have been built by the Ministry of Works. As soon as the coal seams are exhausted, these roads are abandoned, and the surface of the ground is reinstated. There is nothing to suggest that the present experience will result in the permanent conveyance of bulk coal by road.

Flat-Bottom Track on the L.N.E.R.

In recent years the L.N.E.R. has laid in stretches of flat-bottom rails on various parts of its system with a view to providing a stronger track for post-war requirements. Early this year the company went a step further and at a station a short distance from London a 1 in 10 lead, or connection, has been laid-in fabricated from flat-bottom rails weighing 110 lb. per yd. This is in a running line which is carrying a considerable amount of traffic and the lead is giving every satisfaction. The work has been carried out to the requirements of the Chief Engineer's Department, L.N.E.R., in collaboration with Messrs. Taylor Brothers, of Sandiacre, Nottingham, who manufactured the various parts at their works. Before despatch, the work was fitted up complete with all the necessary crossing timbers—as is now customary—to ensure that there would be no difficulty in laying-in the lead. The actual work was carried out on a Sunday without any serious interference with traffic. Arrangements for the installation of further switch and crossing work of this type are in hand.

Great Southern Railways' Recovery

In view of the poor prospects of the Great Southern Railways for 1943 based on the position of affairs for the first two months of that year, the recovery for the whole year which the Chairman was able to show at the recent annual meeting was most remarkable and satisfactory. Many factors combined to produce the improved results, but particular credit should be given to the operating skill shown in face of the further increase in the price of coal, of which only a very low grade quality was available. By using this to the best advantage the company not only improved the running of trains but saved about £50,000 on coal alone compared with the previous year. The better running of trains also eliminated to a great extent the payment of overtime, but this saving had to be set against bonuses granted to the staff. Gross revenue from all sources amounted to £6,239,322, the highest in the history of the company, and exceeded that of the previous year by £899,135. Increases in railway rates contributed about £285,000 to this advance. Some 2,038,000 more passengers were conveyed by rail than in 1942, and some 255,000 additional tons of merchandise and minerals. The payment of dividends on all stocks was made possible by drawing on the carry forward and by an adjustment of £150,000 in respect of the provision for income tax.

From Eight to Six-Coupled Wheels

The question whether gradient, traffic, and other conditions could ever justify the building in this country of eight-coupled express passenger engines seems to have been given a definite answer at last, but an unfavourable one. In 1934 and again in 1936, the L.N.E.R. built such engines for working certain trains in the Scottish area, but the first of these has now been converted into a 4-6-2 and the remaining five are officially scheduled for rebuilding. It would appear that any advantage that these engines may have shown in certain services, has been offset by the limits placed on their movement over the railway generally; a long, rigid wheelbase prevents their operating on many lines where there are sharp curves. The most important effect of the rebuild is to reduce this rigid wheelbase from 19 ft. 6 in. to 13 ft. The adhesion weight of 79 tons has been reduced to 66 tons; the maximum axle load has been increased from 20 to 22 tons. To compensate in part for the loss of adhesion the cylinder diameter has been reduced from 21 in. to 20 in. but the ratio between adhesive weight and tractive effort, being only 3·67, is still somewhat short of what it was, namely, 4·06. The "A3" class has practically the same adhesion weight but the cylinders are of only 19 in. dia. and the driving wheels are larger in diameter (6 ft. 8 in. instead of 6 ft. 2 in.). The "V2" class with practically the same adhesion and the same size of driving wheel has 18½ in. cylinders. Thus the rebuilt engines are setting a precedent and their performance will be watched with much interest.

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Seven Forms of Transport

THE title to the editorial article in our January 28 issue—namely, "Railways, Canals, Roads"—has come to be accepted generally as representing the three major forms of inland transport, as was certainly the case until comparatively recent years. The exigencies of war, however, have given a fillip to certain other forms of freight transport, all of which were known but not widely used in pre-war days. Thus it appears there will on occasion be seven major forms of transport available to compete for goods traffic between points in the same land area. They are as follow:—

Rail
Road
Canal and Inland Waterway
Coastal and Lake Shipping
Pipeline
Aerial Cableway
Aircraft

The first four require no explanation, although the alteration in the position of coastal shipping is one which will require careful consideration in the post-war era. The use of aircraft for freight transport is in its infancy, and until now has been confined to the carriage of light goods of high value or very urgently required. Presumably, there will always be such a distinction, but the heavy loads now regularly conveyed to meet war needs leave little doubt that the "lightness" of post-war aerial freight will have considerably wider limits than was thought to be the case five years ago, and the value of such freights will not in the future need to be anywhere near so high as in the past in order to come within the category of economic transport by aircraft.

Pipelines provide a different type of transport, inasmuch as they convey one particular kind of commodity in bulk very cheaply. It may be argued that this leaves all other kinds of freight to be conveyed by other means, but in practice this will often prove the deciding factor against the construction of a railway, for the construction of a pipeline is justified only where the volume and regularity of load are fairly high, and this implies that usually such load will be the major freight of the area. The possibility of its conveyance may act as an incentive to the construction of a railway for it, and for general freight and passenger traffic; whereas the unlikelihood of securing any substantial portion of such freight would usually leave the remaining potential traffic insufficient to prove attractive to the construction of a railway on commercial considerations.

The other form of conveyance for bulk loads is the aerial cableway, which is coming into increasing use in many parts of the world. The cableway is often regarded as primarily a tourist amenity, designed to afford easy access to a notable mountain peak, as this is the use which attracts most popular notice. In point of fact, all the lengthy cableways have been designed primarily, and are usually used exclusively, for the conveyance of freight. For example, cableways to transport industrial raw materials have been used in Sweden since 1845, when the first line was built by Carl Husberg at the Falu copper mine in north-central Sweden. It was but 328 ft. in length, but embodied principles which have provided the basis for subsequent development. There were no marked improvements in the production of cables for nearly 40 years, but in 1884 two Englishmen (Latch and Batchelor) invented a cable of high tensile strength, and gave a new fillip to the industry. A few years earlier (in 1877) the German inventor Bleichert had devised the two-line system with separate supporting and traction cables. With the benefit of these improvements, Ernest Nordstrom established a Swedish company in 1891 for the erection of cableway systems, and built a cableway at Ostero (Norway), and one at Henriksdal (Sweden) for the transport of oil drums. The Italians have also made considerable use of cableways, both in Italy and in Somaliland, and recent increases in speed and carrying capacity have altered the whole complexion of aerial cableways as a means of competitive transport. It may be recalled that some years ago the Tilmanstone Ropeway in Kent (the Dover terminus of which was included on the map in our February 11 issue, page 147), was built to provide coal transport between pit and ship to the exclusion of the Southern Railway.

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Free Wheels for Rolling Stock

MR. NEWBERRY'S valuable paper on the riding and wearing qualities of railway carriage tyres, of which an abstract is given on page 310, as it deals so prominently with the effects of various degrees of coning in the tyre profiles used during the actual tests, brings to mind the old but still little understood problem of the suitability of free wheels, running on fixed axles, for railway rolling stock. One of the difficulties in assessing the merits of this method of attaching wheels is the scantiness of published literature on the subject. A mathematical treatment, however, appeared in the technical press* shortly before the present war and concluded with a list of six references to other papers, four of which were German, one French, and one American.

The most outstanding merit to be derived from the adoption of free wheels, according to most claims, is the reduction of the resistance of the vehicle when passing round curves. This resistance can be regarded as related to the sum of two rectangular components: (1) the net friction work done by the wheel in translation along the rail, and (2) the work done in shifting the wheel transversely, according to the degree of curvature involved. These two effects, longitudinal and transverse, are brought into play simultaneously, in normal rolling stock; but the substitution of free for fixed wheels would cause the first-mentioned (work done in translation) to vanish, leaving only the work done in lateral movement. It has been calculated that, for a four-wheel bogie, with a gauge of 4 ft. 8½ in. and a wheelbase of 8 ft., the total resistance to be overcome would be lowered by about 27½ per cent. by the adoption of free wheels.

In theory, the losses represented by energy absorbed by these resistances are unaffected by the size of the wheel diameter. The length of the wheelbase, however (which is naturally governed as to its minimum value by the wheel diameter) has a profound influence. The length of wheelbase, moreover, influences the relative proportions of the two components of resistance mentioned in the preceding paragraph, and hence directly governs the potential amount of advantage to be derived from free wheels. As to the comparative riding qualities of fixed and free wheels, we have to bear in mind that the tendency towards "hunting" in railway rolling stock is a function of the degree of coning of the tyre profiles and of the amount of clearance between the flanges and the inside surfaces of the rails. The natural wavelength to which the wheel-and-axle assembly tends to conform its movements can be quite simply calculated, from considerations of track gauge, clearance, coning, and wheel diameter. It may be remarked, in passing, that such calculations reveal, as perhaps no other method can, the enormous influence of flange wear and rail wear (as affecting clearance) on riding qualities. Theoretically this wavelength may vary from nearly 5,000 down to about 2,000 ft. for 3 ft. 3½ in. wheels, with 1 in 20 coning, running on standard-gauge track. The gradual reduction of the wavelength (giving proportionately quicker oscillations for a given speed) is due to the corresponding increase in clearance, which may be as low as, say, ⅜ in. with new rails and new tyres, increasing perhaps up to as much as 1 in. with worn rails and tyres.

In practice, of course, the wavelength is very much less. Various experimental attempts, over a long period of years, to

* *The Locomotive, Railway Carriage & Wagon Review*, 1938, vol. 44, p. 330

ascertain its value, have yielded results ranging between 50 and 60 ft. This rather astonishing reduction from the theoretical value is due to the fact that when the load is applied to the wheel, setting up compression between it and the rail, the point of contact between the two is shifted inwards, that is, towards the flange. The effect, because of the angle of coning of the tyre profile, is to increase the effective radius at which the wheel rolls along the rail, and hence to reduce the wavelength. It is in these considerations that we find the reason for the superior riding qualities, so amply proved by the experimental work described by Mr. Newberry, of tyres which are cylindrical or which have the extremely slight taper of 1 in 100. With the adoption of free wheels, however, "hunting" would completely vanish, because of the ability of the wheels to run independently on their axles.

What, then, are the principal objections to the wholesale fitting of free wheels to railway rolling stock? Probably their somewhat higher costs form the first consideration, with the comparatively limited room at the designer's disposal for the location of the bearings a close second. Experiments with "rail buses" built on the lines of road vehicles, and "converted" to rail transport by merely fitting flanged steel wheels gave disappointing results, often because there was so little space between the bearings. Nevertheless, the possibility of using free wheels deserves further consideration. There are several notable advantages other than reduced resistance on curves and improved riding qualities. For example, axle stresses are considerably reduced, enabling lighter axles to be embodied in the design. Experiments with individual wheel drive have already been made in the U.S.A., and also in Germany and Switzerland, chiefly in various types of tramcars; and it is claimed that slipping is decreased by its adoption, and the amount of wear taking place in the wheel adjacent to the gear, in axle-suspended motors, is likewise reduced.

London Underground Signalling

ALTHOUGH it was early recognised that automatic signalling would offer particular advantages when applied to lines carrying a regular and frequent service of trains of the same class, such as the underground and elevated lines in large cities, and a few attempts, some relatively successful, were made to apply the idea to steam-worked lines—of which Black's mechanical automatic block on the New York Elevated affords an example—it was the introduction of electric traction that led to the problem being more seriously studied. It was then seen that the great benefits of high acceleration and rapid movement at terminal and junction points could not be fully utilised unless short block sections could be established wherever they were necessary, without the hampering restrictions of manual signal operation with its inevitable and variable time lags. Electric power being available for traction, to endeavour to make use of it for signalling seemed a natural consequence. Such proposals as were put forward at this time, however, were invariably based on some intermittent contact method of controlling the signals, no practicable way of applying the track circuit to an electric railway being known, and all suffered from the unavoidable limitations of such systems.

Engineers hesitated to consider untried devices and their reluctance was justified, for the consequences of collisions on lines almost completely in tunnel might easily be extremely serious. The first tube lines in London were fitted with lock-and-block, with release by a brush contact operated by the last vehicle. The section from the starting signal at one station to the outer home of the station in advance was, of course, under the control of two signalmen; from the outer home onwards there might be one or two sections to the next starting signal, controlled solely by one man, with electrical and mechanical rotation locking. This working was a development of the practice met with on the old steam underground routes and a very frequent service was successfully run with it. The Liverpool Overhead line, opened in 1893, however, was fitted with an intermittent contact system of automatic signals, also worked from the last bogie of the train, with station to station block telegraph, worked by the platform staffs, superimposed, but the apparatus found no further favour. An intermittent brush contact system was tried unsuccessfully on the Central London but nevertheless applied throughout the Great Northern and City, opened early in 1904. Its obvious defects led the Board of Trade to insist on extensive modifications being effected within a few months. Ordinary d.c. track circuiting was therefore added, the use of the fourth rail system making this relatively easy, with the additional safeguard of locking a de-energised track repeater relay until the brush contact at the overlap point in advance was operated. So altered, the apparatus functioned successfully for a long period and was the first reliable automatic signalling applied throughout a tube line.

It had by then been realised that the solution of the problem lay in getting track circuits to function safely on an electric railway, with the risk of false interference from leakage, etc.; but without having to resort to additional devices, such as the Great Northern & City safety lock. Very successful results had been obtained in America on the Boston Elevated Railway with the polarised track relay devised by Mr. H. G. Brown to give protection against irregular traction current action. This line had been opened in 1901 and was equipped with a signal and interlocking system far superior to anything in use at that date on lines of the same class. When the electrification of the District Railway was decided upon, under American auspices, and the construction of certain associated tube lines, this track circuit system was adopted, with the addition of a second track relay at the advance end of a section. The use of the fourth rail traction system facilitated the work which, with the electro-pneumatic power interlocking, formed a complete and uniform system, the basis of all the development that has been seen since on the London Underground lines. The Metropolitan line, however, although adopting the same track circuiting arrangements, preferred to use electricity throughout and dispense with compressed air. Although safety was increased by the change, in consequence of the use of continuous track circuiting and automatic train stops, it is to be observed that the public had no cause to grumble at the security it had enjoyed under the earlier operating methods. From the opening of the first section of the Underground in 1863 to the end of 1907 only 4 passengers lost their lives in train accidents, 1 on the District and 3 on the Metropolitan line.

That these first automatic installations, admirably constructed as they were, would call for improvement as time passed was to be expected. Next to sound general principles, without which no signal system is worth having, it is attention to detailed design and installation and maintenance methods which brings the perfection of service present-day conditions imperatively demand. Only those closely associated with signal work, perhaps, can fully appreciate how much depends on the correct design of the components of relays, signals, point mechanisms and other devices, as well as the laying out and running of wiring and provision of power supply and switching facilities. In all these respects experience is the great teacher and the various signal engineers concerned, assisted by the signal industry, have been careful in learning from it. The results of this were set forth in the paper read by the present Signal Engineer of London Transport, Mr. R. Dell, before the Institution of Electrical Engineers on March 17. He was not able to discuss all the equipment in detail but dealt with its principal features, as they exemplify the considered views of his Department, based on much thought and practical experiment. Unlike most other signal engineers, he is fortunate in having a uniform class of traffic to handle, with very little exception, and fairly uniform conditions in other respects. They are, however, exacting ones, as not only must safety be as fully assured as is humanly possible but every source of delay must be eliminated. It may be said that this is the case anywhere and theoretically it is, but practically the demand is less pressing with most other types of service.

Mature consideration has led London Transport to the conclusion that the electro-pneumatic power system is the one best suited to its requirements and no expense has been spared in providing the most robust and perfect form of it, the designs of the standard mechanisms being very neat. The electro-pneumatic semaphore and tunnel spectacle signals, which have rendered remarkable service, are gradually disappearing, effecting a substantial simplification. It is of particular interest to note that the choice of an insulated traction return, first seen in this country—apart from an experiment—on the Mersey Railway, although not dictated originally by signalling considerations, is held to bring appreciable advantages generally and to be much more economical than the running rail return system when the average number of track circuits per mile, which is about 18 on the L.P.T.B. lines, passes a certain figure. We believe that the fourth rail system is confined to Great Britain and one would think that there must be many densely serviced lines in America where it might be adopted to advantage, in view of the results obtained in London. The change to the use of alternating current signal apparatus, now generally effected, was bound to come and has enabled the few real difficulties encountered with the first equipment to be eliminated. It followed the work of Struble, Thullen and others in America and was applied on the Central London, which then had no fourth rail, not long before the last war. The adoption of the condenser feed system and certain improved details in the relays has brought an even higher state of reliability to already excellent apparatus. The changing of equipment is facilitated by the detachable terminal system, which avoids the unnecessary unfastening of wires and goes far towards elimi-

nating a source of error that may have grave consequences. The regrettable accident near Charing Cross in 1938 was caused initially by the attaching of a wire on a wrong terminal. Failure to test the work and to act efficiently when the dangerous situation was reported, ended at length in disaster and broke a splendid safety record, no passenger having been killed on the District line since 1876.

Although for many years power interlocking practice on the Underground could have been regarded as conservative in certain respects a change was seen some twelve years ago when relay interlocking was introduced to some extent followed by a form of route setting installation which possessed features peculiar to itself and not seen in other applications of the route principle. Much ingenuity is apparent in the circuits used but, as Mr. Dell pointed out, they are complicated and the finding of faults is necessarily more difficult than with the other equipment long used on the Board's lines. The risks to which war now exposes railway installations has created a wish to see fewer large concentrations of control, or at least a ready means of dispersing the control and working areas separately in case of need, without introduction of any complicated circuits or apparatus. This has been attempted in the power operated lever system, with remote control, and but for the war several examples of it would probably by now be in service. Meanwhile experience of it is being obtained with a small trial installation.

In addition to signalling apparatus, as ordinarily understood, much subsidiary equipment comes under the control of Mr. Dell's department, essential to the general efficiency of the traffic working and the public safety and comfort. Short of some radical change taking place in the working of rapid transit lines, of which there seems little prospect at present, it seems likely that Underground signalling practice will remain substantially unchanged for some time, unless any alteration promises to bring very real advantages. In the creation of the present highly developed equipment and the training of those responsible for maintaining it, Mr. Dell has played a conspicuous part, first in association with, and then in succession to, his distinguished predecessor, the late Mr. W. S. Every.

The Road Carrying Industry

ALTHOUGH there is wide divergence of opinion about the degree and form of co-operation which is desirable in the post-war period between various forms of transport, it has been accepted generally that some definition of spheres is necessary in the public interest. By far the most difficult section of the transport industry with which to negotiate is that concerned with road motor haulage, for, as clearly shown statistically and otherwise in the editorial article published in our January 7 issue, a striking feature is the smallness of the management unit. The "A" and "B" licence holders, which constitute the public road haulage industry, total some 60,000 independent hauliers controlling approximately 150,000 vehicles, and the only connection between one and another with the object of combined action is through membership of one of the associations. Broadly, experience has shown that the adherence of the members to any action of these associations is directly proportional to the degree of fear of interference which is being experienced by the road haulage industry at any particular moment. When one of the associations is engaged in defensive action, its members rally well, but if the association enters into negotiations with any other body, or with the Government, in order to achieve concerted working of transport, there is a strong tendency for many of the members to form an opposition movement, and, in extreme cases, to secede and form a new association. In other words, the road haulage industry has constantly shown itself incapable of speaking with a united voice (excepting in purely defensive matters), and so fundamentally divided in objectives as to lead the impartial observer to the conclusion that no policy other than that of permitting the individual haulier completely unfettered and irresponsible liberty is likely to secure willing acceptance.

During the past few weeks there have been particularly striking examples of this pulling both ways. On the one hand, considerable public attention has been given to the imminent formation of an organisation to be known as the National Road Transport Federation, upon which the work of preparation has occupied two years on the part of the Road Transport Organisation Joint Committee, under the Chairmanship of Lord Perry. It represents the amalgamation of seven major road transport organisations, and is intended to be the recognised authoritative voice of the industry. It will represent public road motor haulage, traders' transport, and public-service-vehicle operation, and one of its declared aims is to regain the greatest freedom consistent with the national interest "so that road transport may be able to serve the public to the best advantage." The organisers of this new federation have announced that it will press for a modification of commercial motor taxation, and for the whole of motor taxation and fuel duties to be re-allocated towards the cost of road construction, improvement, and maintenance. It will advocate the provision of more trunk roads; special motor roads; the elimination of level crossings; the freeing of toll roads, ferries, and bridges; and the modification of certain limitations on the size and weights of vehicles. It also proposes to confer with other forms of inland transport (railways, coastwise shipping, canals, and aviation) to secure the maximum benefit for the public, and provide an economic basis for the most extensive and comprehensive transport services in the national interest. In the last-named very important sphere doubts must immediately arise about the ability of the new federation, or indeed of any other voluntary organisation in the road transport industry, to implement any agreement with other forms of transport which it might make. In passing, it should be noted that the passenger-vehicle activities represented by the new federation will be mainly those of the minor operators, as the major part of the passenger-carrying road transport industry is organised in powerful associations outside the new merger. It is with the road haulage industry, however, that the failure to achieve united action is almost certain to arise.

On the other hand, on January 6 Mr. J. S. Nicholl issued on behalf of himself and seven other well-known medium-sized hauliers a brochure on "The Road Carrying Industry and the Future" (Price 1s.) containing a reasoned statement on the existing state of the industry, and some suggestions for its post-war organisation. The suggestions take the form of controlled evolution, aiming at a step-by-step procedure such as may be effected without any unfavourable repercussions upon trade and transport as a whole, and still ensure cumulative progress. The view is held that sound development lies not in the direction of monopoly, but rather in encouraging evolution towards larger and more stable units. It is the considered opinion of this group that some measure of consolidation of the small operators is the first essential before there can be much progress in other directions. The authors recognise the many functions combined in the person of the small owner (*e.g.* proprietor, foreman, clerk, driver, and salesmen); they appreciate the value of the personal touch, but feel that the methods both of obtaining and operating traffic have often been crude, and the fixing of charges slap-dash. They would not eliminate the single vehicle operator, but would limit him to a very restricted local area, and, if he wished to expand this area, he would be required to link up either with a larger concern or with a sufficient number of his small fellow operators so as to form a unit of size and responsibility suitable to the wider sphere of activity desired.

To enforce such a course, the suggestion is that the Minister of Transport should seek Parliamentary powers to enable him to withdraw from certain "A" and "B" licence holders the right to use their vehicles anywhere in the kingdom. The Minister should then announce a date, allowing a reasonable time for a considerable degree of voluntary consolidation to be effected, after which all road carrying undertakings below a stipulated size would be limited to local transport only; the radius should vary with the circumstances. Mr. Nicholl and his friends emphasise the desirability of stabilising road transport charges, again by gradual process, and recognise the right of the trader to transport his own goods without restriction so long as he observes standards of wages and working conditions comparable with those deemed proper for the public carrier, and is limited to the carriage of his own goods only.

Without endorsing this scheme in detail, we feel that there is much in it which is both reasonable and equitable, and obviously it is prepared by those possessed of a close knowledge of the intimate details of the road haulage industry. Nevertheless, its issue immediately produced a disclaimer from the Haulier Sectional Board of Associated Road Operators Limited, expressing disagreement with any policy of compulsory amalgamation, and contending that the right of the individual to engage in industry, no matter how small his concern, is a fundamental of post-war policy, indissolubly linked with the freedom of the citizen, and that such right must be conceded subject always to the interests of the community as a whole. *The Railway Gazette* is no advocate of nationalisation or bureaucratic control, but we feel that true freedom in the national interest implies reasonable security of tenure and not the law of the jungle. It has long been recognised that public service, in any of its forms, must imply limitation on competitive activity in return for the assumption of public obligation. Competitive water supply, with rival undertakings having the right to use the earth under the highway for the conduct of their mains, is not more anachronistic than the continuance of unrestricted use of the roads by all and sundry in the road haulage industry.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Beyer-Garratt Locomotives in Sierra Leone

Sierra Leone Government Railway,
Freetown. January 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Seventeen years have elapsed since the first Beyer-Garratt locomotive was brought into use on the Sierra Leone Government Railway. Three Beyer-Garratt locomotives were obtained in 1926 and four more of the same type in 1928 and 1929; in 1943 six additional Beyer-Garratts, in which some modern improvements had been incorporated, were obtained. The Sierra Leone Government Railway, which is of 2 ft. 6 in. gauge, introduced these locomotives with a view to increasing the train loads on the railway.

The haulage power of ordinary locomotives in Sierra Leone is severely limited by the small maximum axle load of 5 tons, a ruling gradient of 1 in 50, and curves of 5 chain radius, together with the frequency with which curves are met, which greatly reduces efficient haulage of trains.

When the first Beyer-Garratt locomotives were acquired, tests were made between one of them and the existing tank and tender engines, the result of which was very interesting as it was shown that the new Beyer-Garratt locomotives were capable of hauling 183 tons, compared with a combined load of 184 tons of a tank and tender locomotive, but the coal consumption of the Beyer-Garratt locomotive was less than that of the tender and tank engine combined.

The Beyer-Garratt locomotives were introduced to work the relatively heavy and long-distance trains over the main line from Water Street to Pendembu and Makeni—distances of 227 and 147 miles respectively, from Water Street.

One of the handicaps with which the Railway has to contend, due to the low axle load, is adhesion, and no matter how strong or powerful an engine is built, it is useless to increase the tractive effort unless sufficient adhesion between the coupled wheels is made available. With a view to improving the adhesion, an experiment has been made locally with Beyer-Garratt locomotive No. 56, which has been converted from the original wheel arrangement of 2-6-2 + 2-6-2 to 2-8-0 + 0-8-2. To this end the inner carrying wheels and fittings, etc., were removed and the frames on both units suitably altered and extended to receive extra pairs of coupled wheels, springs, etc., and the coupling rods extended to the additional pairs of coupled wheels. In addition, the boiler pressure was increased from 175 lb. to 200 lb. per sq. in.—thus increasing the available tractive effort from 17,000 to 19,400 lb.

With the weight available for adhesion increased by approximately 10 tons, the ratio of adhesion to the increased tractive effort at 85 per cent. boiler pressure was increased from 3·9 to 4·6. The performance of this engine has been considerably improved and to date has been hauling loads in the neighbourhood of 250 to 280 tons under normal running conditions, compared with the rated load of 185 tons for the other Beyer-Garratt locomotives. This conversion is of particular interest as it is believed it is the first 8-coupled Beyer-Garratt locomotive ever to run on a 2 ft. 6 in.-gauge railway.

Yours faithfully,

W. VENNER,
Chief Mechanical Engineer

Public Relations

London. March 20

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Even in wartime the railways of this country are sparing no pains to improve their relations with the general public—at least by posters, booklets, and notices in the daily and technical press. Yet in the long run it is by actual contact with railways and the railway staff that the travelling public judges their performance. The present is hardly a fair time on which to base a definite opinion, but recalling conditions before the outbreak of war there was a number of ways in which the railways could improve their relations with the travelling public. No matter how skilfully train services are worked out, no matter how tastefully passenger rolling stock is decorated, or stations adorned, it is the human side of travel that inevitably leaves lasting impressions. Here the railwaymen who come into direct contact with the traveller have an important role to play.

Not everyone enlists the aid of a porter, nor yet consults a platform inspector; but everyone at some time in a journey encounters a booking clerk, and a ticket collector. Brusqueness and ill-humour are unfortunately all too frequent in these functionaries. In any event the dingy gloom of many booking offices is not exactly conducive to a spirit of friendliness between the customer and the representative of the railway company, and the forbidding little trap doors through which coin and ticket pass have a strong suggestion of a prison cell. One has only to glance at the box-office in a modern cinema to realise how much more cheerful things might be made. The ticket collector may have an exacting and responsible job, and there are members of the public who seem to go out of their way to be awkward; but it is surprising how far a pleasant manner goes in promoting a feeling of goodwill towards the railway as a whole.

Strangely enough some of the worst offenders among railway servants are to be found in the enquiry offices at the larger stations. In this respect we have vivid recollections of two London termini, both owned by companies that ordinarily take a great and largely-justifiable pride in their record of public service; yet, before the war, the enquiry offices at these stations had among their regular staff men whose incivility could scarcely be surpassed. It took the approach of Christmas for them really to excel themselves. One of the companies concerned used to go to considerable expense to decorate the station, and generally make a very real endeavour to create a pleasant and seasonable atmosphere; but there in the midst of the fairy-lights and the glittering tinsel was this particular company's arch-saboteur, in finer form than ever, behaving against that festive background like some demon of the pantomime in his persistent efforts to discourage, frustrate and generally annoy every possible railway customer who came his way. The fact that individuals like him, and his counterpart in the neighbouring station, remained on the selfsame job for many years suggests that little thought has hitherto been given to the selection of men for such tasks. Tact, courtesy, and a pleasant manner are qualities essential in any individual who has dealings with the general public, and the choice of men for duties in important railway enquiry offices needs to be most carefully made if the unqualified goodwill of the public is to be gained in post-war years.

Yours faithfully,

OSEN

Menai Bridge

Essex House, Essex Street,
London, W.C.2. February 21

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Further to my letter in your issue of December 31, not only was the proposal that the Chester & Holyhead Railway should be carried over Telford's Menai Suspension Bridge put forward in the Report of Mr. Charles Vignoles dated November 29, 1837, to the Commissioners for Inquiry into the best system of railway communications through Ireland, but the company actually proposed in its Bill in 1843-4 to appropriate permanently one of the two roadways of Telford's Bridge.

Mr. W. A. Provis reported to the Commissioners of Woods & Forests on February 15, 1844 (see *Herapath's Journal*, April 27, 1844, page 467), that according to the deposited plans and sections:—

> "the limits of deviation include the whole of the bridge, the toll-houses, gardens, and all other property now vested in your Board, at both ends of the bridge; so that unless restricted by Parliament, the bridge, and all that is connected with it, might be dealt with at the pleasure of the railway proprietors.
>
> "By taking possession, as proposed of the south western carriage-way the public, who have hitherto enjoyed the use of it, would be excluded and the common intercourse of the country would be confined to the north eastern carriage-way and the footpath."

Mr. Provis went on to point out the inconvenience experienced from a single line of traffic, whilst one of the roadways had to be renewed in 1839, and added:—

> "For temporary accommodation, the bridge might be used for the transit of railway passengers" (which Mr. Provis thought could be done not only by separate carriages drawn by horses but by an engine and a moderate train of carriages) but it ought not to be made a permanent portion of a great national railway."

The Commissioners of Woods & Forests therefore objected to the proposal and the company had to take its Act (7 & 8 Vict. c. 65) for a railway with a hiatus of five miles between Bangor and Anglesey; the Government gave an assurance that when the company had formulated a satisfactory scheme for bridging the Straits the Government would support a subsequent Bill.

The filling of this gap was authorised the next year by the Act 8 & 9 Vict. c. 33, which received the Royal Assent on June 30, 1845, and one of the tubular ways of Robert Stephenson's Britannia Bridge was open for traffic on March 18, 1850, and the second on October 11, 1850. (See "The Life of Robert Stephenson" by J. C. Jeffreson, 1864, Vol. II, Chapter III). Nine years later England lost two great builders of bridges within a month: I. K. Brunel on September 13 and Robert Stephenson on October 12, 1859.

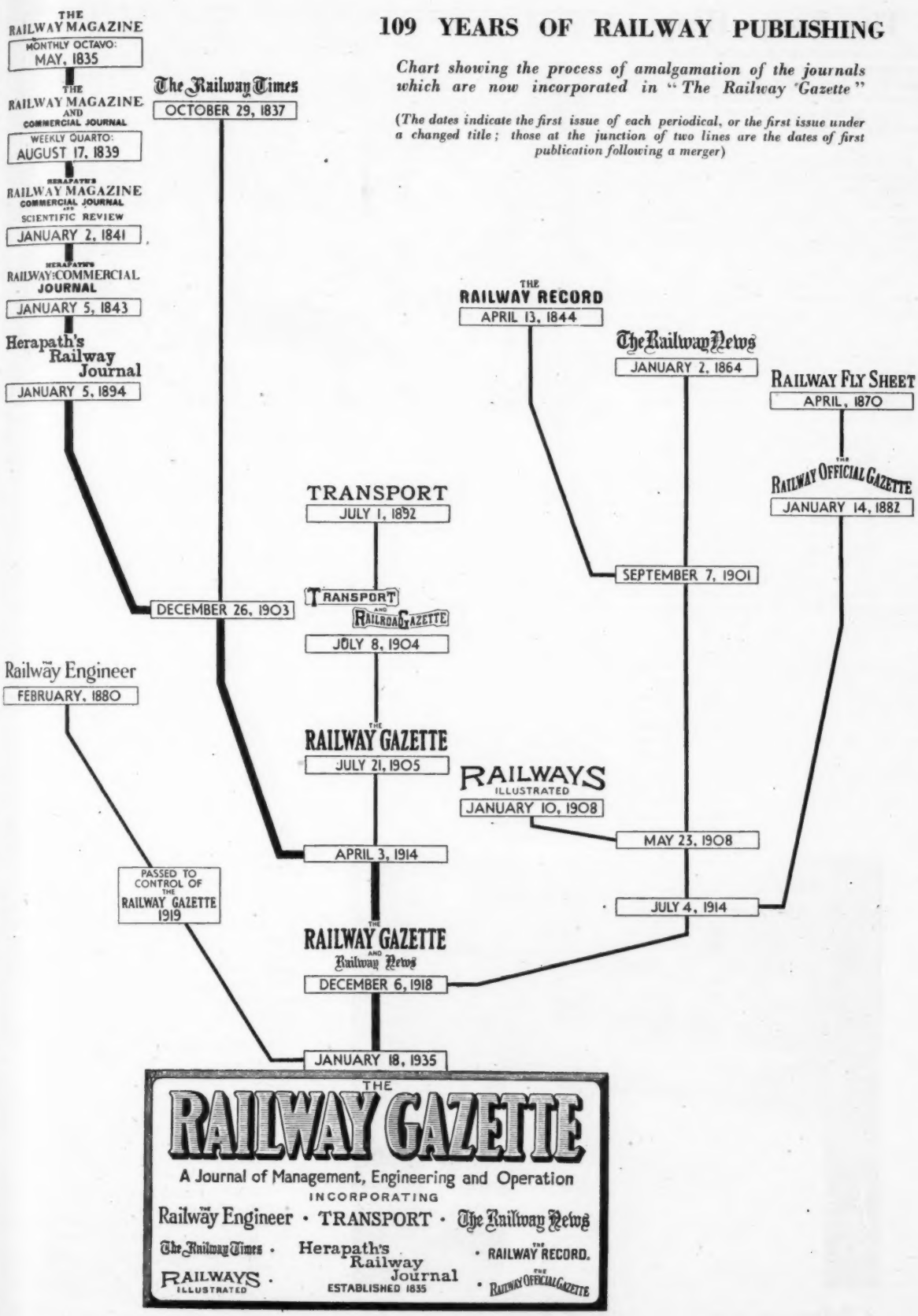
Yours faithfully,

KENNETH BROWN

109 YEARS OF RAILWAY PUBLISHING

Chart showing the process of amalgamation of the journals which are now incorporated in "The Railway Gazette"

(The dates indicate the first issue of each periodical, or the first issue under a changed title; those at the junction of two lines are the dates of first publication following a merger)



The Scrap Heap

Even the small metal staples which hold bus tickets in bundles of 100 are salved. Over 5 cwt. have been collected by London Transport since the beginning of 1941—5 cwt. of drawn-steel wire to be returned to assist the war effort.

* * *

In twelve months the L.N.E.R. staff at High Street Goods Station, Glasgow, subscribed £567 to its charities and infirmaries fund. The sum of £200 was allocated to the Glasgow Royal Infirmary, and the balance to other infirmaries and hospitals in Glasgow.

* * *

Fell Over Bridge from Train

An extraordinary accident recently occurred at Leigh during the blackout. When a train stopped near the station a passenger must have thought it was at the platform. He presumably opened the carriage door and fell over the parapet of the railway bridge into the street over 20 feet below. He died in Leigh Infirmary.

* * *

L.M.S.R. Theft Losses in a Year

Mr. Vernon Gattie, prosecuting at the Old Bailey recently in a case concerning parcels stolen from the railway companies, said that last year the losses on the L.M.S.R. alone were over £1,000,000 worth of property—nearly £3,000 every day. Judge McClure said that the losses were terrible, with the result that some people would not send parcels by rail. Four men were sentenced to terms of imprisonment varying from six months to two years.

* * *

The Great Blast

I spent a little time at 81, Piccadilly, recently, recapturing the early history of London's railways. This is the centenary year of the London and Dover line; pictures, old bills, time-tables and models are on show to commemorate it. I thought that the original London Bridge station looked a much more cheerful starting point for a journey than the present one. Part of the old wall still stands. Take a look at it. Those Dover trains of 100 years ago took about three hours. Before the war a boat train used to do the 77 miles in one hour 35 minutes. Now the time is two hours 17 minutes. So the trains of 1844 don't show up too badly. One of the engineering feats in building the line was the blasting away of a million tons of chalk from the Round Down cliff at Dover; 18,000 lb. of gunpowder were used for what was called The Great Blast.—*From "The Londoner's Diary" in "The Evening Standard."*

* * *

Many officers and other members of the staff, of all ranks, of the Canadian Pacific Railway, make contributions to Canadian public life apart from their work for the railway system. Thus, Mr. R. T. Alderman, a carpenter in the Munitions Department of the company's Ogden Shops, is a Member of the Senate of Alberta University, and an Alderman of the City of Calgary. At the other end of the scale, the Chairman & President, Mr. D. C. Coleman, has taken an active interest in first aid and nursing in Canada, and has contributed so effectively that his work was recognised by the Order of St. John of Jerusalem, which made him a Knight of Grace. Five members of Parliament or of provincial legislatures work for the C.P.R. In the municipal field, there are ten mayors, nine reeves or deputy-reeves, and 115 aldermen or councillors. Boards of trade, chambers of commerce, and other organisations claim the services of seventy C.P.R. men.

* * *

The steps of Mr. Campbell, L.M.S.R. clerk, were more springy than usual as he strolled over a field belonging to the company. So he stopped—he looked—and he dug—and found 205 tons of rubber. Excavators had to be used to remove the earth and rubble which had been thrown on to this dump of old tyres when it had caught fire many years ago.

* * *

Circumstantial Evidence

In a trial, which has attracted a good deal of press notice, defending counsel intimated that a plea of insanity might be preferred on behalf of his client who was charged with theft, falsification of accounts, and forgery. Among items which it was stated had been supplied to the accused were four refrigerators, trunk loads of photographic films, six hunting saddles (and it was stated that the accused had never ridden a horse), hundreds of tablets of soap and *two miniature railways*.

* * *

Tailpiece

JET PROPULSION

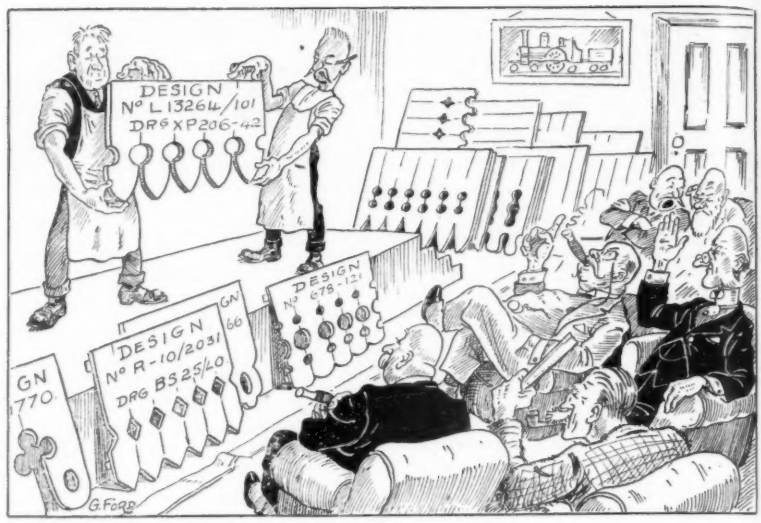
If trains upon the iron road
By jet propulsion travel,
There may be quite a little load
Of problems to unravel.

With oil to use instead of coal,
The bore instead of mining,
The railways may produce a shoal
Of plans for oil refining.

The jet would revolutionise
Our rail communications,
And problem one that would arise
Is that of sites for stations.

Such problems while the battle roars
Must wait for their solution,
But sure it is the jet would cause
A railroad revolution.

W. E. N.



Selection Committee

A Pullman car scene on the Norfolk & Western Railway, U.S.A.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

New Coal Dumper at Durban

The new dumper at Durban Harbour is claimed to be the only one of its kind in the world. The dumper, which can also handle iron ore and manganese, has been specially constructed to handle the soft South African coal with a minimum of breakage. It weighs 800 tons, and 16 ships were required to bring its steel sections from Britain.

The dumper works in four synchronised movements: trucks loaded with coal are moved on to the cradle by an electric winch; the cradle lifts and inverts the trucks so that their contents quickly pour into a 250-ton capacity storage-bin; from the bin measuring boxes are filled with 7 tons of coal by automatic movement; the coal is then tipped into special buckets which stand on flat-bottom railway wagons. The latter carry the coal to a transporter which lifts each bucket and empties the contents into the bunkers of ships. The cradle is said to handle the heavily-laden trucks with great precision, a movable hood covering the top of the truck prevents the coal from falling out prematurely, and at the touch of a button the truck is quickly inverted. After the coal has been deposited the truck is returned by the cradle, is run off and another truck is moved into position. When certain new heavy railway-wagons come into operation, the dumper will be able to handle 2,000 tons of coal an hour.

INDIA

Railway Depreciation Fund

At a meeting of the Railway Convention Committee in New Delhi last January, at which Sir Edward Benthall, War Transport Member, Government of India, presided, it was considered what additional appropriation should be made to the depreciation fund during the war as an emergency provision. It was stated that an inquiry by the Railway Board had shown that additional depreciation due to excessive wear and tear during 1939-43 was Rs. 7·85 crores, on the basis of pre-war prices and the present normal rate of contribution to the depreciation fund. The Committee agreed that any appropriation could be on an approximate basis only, and recommended that an additional appropriation of about Rs. 2 crores should be made in the current year and in the budgetary year to provide for the additional depreciation. That additional appropriation should continue so long as the present conditions persisted, and the arrears for the previous three years, about Rs. 6 crores, should be spread over the three years if the general budgetary position permitted.

The Committee also expressed itself in favour of strengthening the financial position by the building up of reserves to be used to meet post-war deficits, rehabilitation and development.

History of Depreciation Fund

The history of the railway depreciation fund dates from 1923 when, as a result of the Acworth Committee's recommendations, a depreciation fund scheme was devised. Certain changes were made in 1924, and in 1935-36. The fund underwent many vicissitudes until the outbreak of war, since when improving railway finances have enabled all outstanding liabilities both to general budget and to depreciation fund to be paid. At the end of 1942-43, the first year in which the actual and nominal balances in the fund agreed, there was balance of Rs. 82 crores in the depreciation fund and one of Rs. 93·5 crores in the railway reserve fund. When the budget for 1943-44 was presented, the Government of India proposed to the Legislative Assembly the scrapping of the financial clauses of the Convention Resolution of 1924, as it was considered that that Convention had acted unfairly to the railways in the years of depression, whereas in present circumstances it gave inadequate relief to the general taxpayer. The Government proposed that the surplus for 1943-44 on the commercial lines be divided between the Railway Department and the Central Government, and that that arrangement should last until the Railway Convention be revised permanently. The Assembly, although it accepted the Government motion, pressed for a special committee to examine and report before the next year's budget was placed before the House, and the Convention Committee was set up.

UNITED STATES

Line Abandonments

Recent applications by railway companies to the Interstate Commerce Commission include proposals for abandonment of lines on a more extensive scale than for some time. The Atchison, Topeka & Santa Fe Railway System has been authorised to abandon its 30-mile branch from Benedict Junction to Virgil, and a 34-mile section from Eureka to Moline, both in the State of Kansas, from December 20, but has been denied permission to abandon its 17-mile line from Waveland to Cheraw, Colorado, without prejudice to a renewal of the application at the end of 1944. An I.C.C. examiner has recommended the Commission to authorise the Chicago, Burlington & Quincy Railroad to abandon 58 miles of line from Humeston to Clearfield, and 27 miles from Merle Junction to Clarinda, both in Iowa.

The St. Louis South Western Railway has asked permission from the I.C.C. to withdraw its application to close down the line from Truman to McDonald, Arkansas (31 miles), because of changed conditions; and the Commission has agreed to dismiss the application.

Railway Engineering in 1943

During 1943 the total mileage of lines laid in the United States, all single track, was 55·8; in addition, 123·8 miles of existing tracks were doubled; and third and fourth tracks were laid down to the extent of 13·1 and 6·8 miles, respectively. The amount of single track doubled was considerably greater than for a number of years; the largest contribution to the total was the 74 miles doubled by the Atchison, Topeka & Santa Fe Railway System in New Mexico and California. The principal engineering works completed or in course of completion were the new joint line into Kansas City of the Chicago, Milwaukee, St. Paul & Pacific, and Chicago, Rock Island & Pacific systems, with a new bridge across the Missouri River; the relocation for 8·8 miles of one of the Missouri-Kansas-Texas lines round a new reservoir at Denison, Texas; and of 19 miles of line belonging to the St. Louis-San Francisco Railway in course of completion; various large-scale bridge renewals (in particular one by the Southern Pacific which will enable its well-known high viaduct across the Pecos River in Texas to be abandoned); the rehabilitation by the Baltimore & Ohio Railroad of its Alexandria branch to provide an emergency route across the waterways round Washington, D.C.; and the new Blue Ridge Tunnel at Afton, Virginia, of the Chesapeake & Ohio Railway (see *The Railway Gazette* of October 1, 1943).

So imperative has been the need for improved marshalling-yard facilities that more than $20,000,000 was spent in this way in 1943 as well as nearly $10,000,000 on the improvement of locomotive depots.

The Tamiami Champion Disaster

Once again a broken rail has been responsible for a major railway disaster in the United States. This was the derailment on December 16 of part of the southbound Tamiami Champion (West Coast), of the Atlantic Coast Line Railroad, at Buie, North Carolina. Later, the northbound Tamiami Champion (East Coast), in which most of the casualties occurred, collided with the wreckage and was partially derailed.

The southbound express (No. 91), consisting of 18 all-steel passenger vehicles, headed by a triple-unit diesel-electric locomotive of 6,000 b.h.p., was travelling at speed 2 miles north of Buie at 12.50 a.m. when the last three vehicles—two Pullman sleepers and a dining car—were derailed by a broken rail which had been negotiated safely by the rest of the train. The locomotive and 15 carriages stopped just over half-a-mile ahead of the derailed vehicles, with no further damage than broken drawgear on two coaches, and a fractured steam-heat connection. The fireman was instructed by the guard to flag the opposite (northbound) track against approaching trains, but apparently misunderstood his instructions, for he went back to protect his own southbound track in rear of the derailed cars. The rest of the crew was occupied in recoupling the damaged coaches when, at 1.28 a.m., the northbound express (No. 8), also travelling at speed, reached the site of the accident; as the derailed vehicles of No. 91 were leaning at 45 deg. foul of the northbound track, the diesel locomotive and 8 carriages of No. 8 were derailed and badly damaged. In these, 52 members of the Armed Forces and 21 civilians lost their lives; 54 were injured. One fatality in the derailed vehicles of No. 91 brought the death-roll to 74.

The double-track main line at this point is equipped with automatic block signals and automatic train-control. A Sperry detector car had been run over the southbound track only two months previously, but gave no indication of a fissure in the rail concerned; the latter had been in service between six and seven years. This is the second smash in 1943 in which the Tamiami Champion has been involved, for on July 24, as recorded in *The Railway Gazette* of January 17 last, the second section of the southbound train collided at Milan with the first; four passengers were killed.

CHILE

Wheat and Iron Exchange

After a recent interview between the Argentine Ambassador to Chile and the Chilean Minister of Economy it was announced that Argentina is endeavouring to barter wheat for Chilean iron ores. Various difficulties in connection with the import by Chile of Argentine cattle also were considered, and the Argentine representative put forward a proposal as to the use by Argentina of the harbour facilities at Puerto Natales, in the far south, for Argentine exports.

Riding and Wearing Qualities of Railway Carriage Tyres

An investigation by the Research Department of the L.M.S.R.

THE turning of wheel tyres has been the subject of attention recently in these columns, though the article published in our issue of October 29 (p. 428) was in effect restricted to locomotives. Carriage-wheel tyres, however, are of much more immediate interest to the travelling public, inasmuch as they have a dominant influence on the comfort of a journey by train. Over several years, the Research Department of the L.M.S.R. has conducted a series of trials with different tyre profiles, and its findings have been admirably summed up in a paper by Mr. C. W. Newberry, B.Sc. (Eng.), A.I.Mech.E., published by the Institution of Mechanical Engineers.

The actual records used in subsequent examinations and analysis were obtained with a ciné-camera taking 64 pictures per second and mounted in the top of a periscope which extended downwards through the carriage floor and had its mirror a few inches above the rail, facing the lower part of the carriage wheel where the latter rested on the rail. In addition to the main apparatus, auxiliary equipment was provided for recording speed and time scales. This included a speedometer and a small lamp mounted in the periscope in such a position that it registered in one corner of the ciné-picture. The lamp was controlled by a clockwork-driven contactor so that it flashed briefly at two-second intervals to record a time scale on the film.

The film, although furnishing a permanent record of the transient motion, did not readily lend itself to detailed analysis of the motion portrayed. Accordingly, apparatus was devised to enable the characteristics to be seen at a glance, and to make possible the direct comparison of the results of several tests. The film is projected very slowly on to a small screen on which a vertical line is ruled. A traversing carriage, arranged in front of the screen, supports a vertical wire, the shadow of which, by the traversing of the carriage, is kept coincident with some chosen feature of the tyre image. The carriage holds a pencil which, by adjustment of the carriage, can be made to execute a transverse movement corresponding to the image of the wheel under observation. By suitably adjusting the vertical wire, the pencil can be arranged to coincide with the vertical line on the screen when the flange of the tyre is in hard contact with the rail. The vertical line thus serves as a datum from which to measure transverse tyre movement. When the paper forming the screen is fed downwards past the pencil, the relative movement of the wheel on the rail is reproduced in transverse movement. The screen is driven "synchronously," that is, the curve traced out by the pencil represents, on a known time base, the desired relative transverse movement. The time base is supplied by the two-second intervals marked by the flashing lamp.

The experiments were initiated in November, 1935, to study transverse wheel oscillation in electric stock and to examine what benefits might be derived by the substitution of a cylindrical tread tyre for the 1 in 20 coning. A three-car set was therefore allocated for tests on the Liverpool-Southport line, where there is sufficient straight and level track for fairly high speeds. Tests were carried out in the following order:—

(1) Tests on standard profile in worn condition.

(2) Tests on cylindrical profile in new condition.

(3) Tests on cylindrical profile in worn condition.

(4) Tests on standard profile in new condition.

This order was chosen so as to leave the train with standard tyres in good condition at the end of the trials. A further modification was introduced later by tests on tyres having a coning of 1 in 100.

All profiles were tested at the highest speed that could be maintained on the test section, though variations in line voltage and in weather conditions caused the speeds to vary. The range was about 55-65 m.p.h. Additional tests were made with the motors in full series when the train speeds were about 40 m.p.h.

In each series of tests the procedure was similar. With the apparatus on the motorcar, a run was made from Southport to Hightown, lengths of film being exposed over selected portions of the track. Visual observations and stop-watch timing of the wheel motion were made where possible, to help in ascertaining whether the film records were representative. On the return run a different wheel was photographed; and in subsequent trials each wheel in the three-car set was covered.

The tyres were then turned to a cylindrical profile, and further tests made. Profiles were again taken after 8,000 and 21,000 miles; at the latter, wear was differently distributed from that on the 1 in 20 coned tyre; the cylindrical tyre tended to wear higher up the flange.

It was subsequently found that the pantograph used in recording tyre profiles was not entirely reliable and a direct method of recording profiles was devised; it was based on a procedure previously used for rail profiles, and consisted of making a plasticene mould of the tyre profile and making from this a print on photographic paper.

By May, 1937, the train had run 52,000 miles and the flanges of the motor car were worn down to the permissible limit; the trailer compo and driving trailer tyres had worn little, however, so these two coaches continued in service until they had run 105,000 miles. The tyres were then re-turned to the 1 in 20 coning in readiness for the fourth series of tests.

Tests on the profiles coned 1 in 100 were then commenced; particular care was taken to ensure that no two wheels on an axle differed in diameter by more than 0·008 inch. The superior riding as compared with the 1 in 20 coned tyre was very marked. The motion was observed to be generally very steady and to be comparable with that of the cylindrical profile in the new condition; and, like the latter, the wear occurred more rapidly in the motorcar tyres than in those of the other vehicles.

Although the riding qualities were in each case characteristic of the profile concerned, there was a marked influence of the track on wheel motion; indeed, at certain locations the wheel motion was entirely determined by track conditions. "Riding factors," derived from the period of oscillation and the driving amplitude, and forming a yardstick for riding performance, have been calculated for each test, and indicate the general impressions of riding qualities as noted by observers on the train. Undoubtedly the best riding occurred with the cylindrical profile in new condition, with the tyres coned 1 in 100 a close second. Both profiles deteriorated during service, but even after considerable mileage the riding factor was equal to that for the 1 in 20 coning when new.

Analyses of the wheel motion show several interesting facts. They confirm the belief that transverse wheel oscillation is a function of distance rather than of time. Again, the wheels in the middle part of a train ride more steadily than those at the ends. Some light is thrown on the relationship between tyre wear and riding by the fact that in early stages of wear, the prevailing transverse oscillation tends to increase while the wavelength of the oscillation changes but little, and this causes a rapid decline in the riding performance. Later, as the tread wears more hollow, a profile is produced which tends to locate the wheel on the rail, and this leads to a reduction in the prevailing amplitude accompanied by a reduction in the wavelength of the oscillation. Thus during the later stages of wear the quality of the riding does not deteriorate so rapidly as at first; in some cases it even improves slightly.

One of the most striking features of the tests was the comparatively large tread wear of the 1 in 20 coned tyres on both driving and non-driving wheels. This is due to the fact that different parts of the area of contact, being on a cone, are at different radii on the wheel and are moving at different speeds. Practically the whole contact surface of the coned tyre is therefore experiencing sliding contact, and the wear is appreciably greater than if the motion were pure rolling as it can be in the case of a cylindrical tyre, even if the latter has a wide area of contact. The same thing has been observed in laboratory experiments.

More important than any aspect of tread wear, however, is the problem of flange wear, for it is usually flange wear which first reaches the critical limit and so controls the effective life of the tyre. With the cylindrical tyres, in which the effect was due to coning is absent, the tendency is for the larger of the pair of wheels to run ahead of its partner, and for the smaller wheel of the pair to drag and run its flange against the rail. The smaller wheel of a pair suffers the greater flange wear. It is this *difference* of flange wear which condemns the cylindrical tyre.

With coning of 1 in 100, and working to a maximum disparity of 0·010 inch (on diameter) between wheels of a pair, maximum wear does not tend to occur necessarily on the smaller wheel of a pair, but almost invariably occurs on all the wheels on one side or the other of a bogie, or even of a complete coach. This suggests that coning of 1 in 100 is sufficient to provide a differential effect without excessive sideways displacement of a pair of wheels, although the centring effect of the coning is insufficient to overcome a tendency which apparently exists to displace a bogie sideways in the track. The precise cause of this lateral displacement has not been investigated yet, but it may be due to maladjustment of the bolster swing links or lack of parallelism of the axles. If so, extra care in design, erection, and maintenance of the bogie would allow the maximum benefit to be secured with 1 in 100 coned tyres.

Conversion of L.N.E.R. 2-8-2 Type Engines

One of six famous eight-coupled engines is rebuilt with the 4-6-2 wheel arrangement

VERY great interest was shown by locomotive engineers in this country when, in 1934, the L.N.E.R. departed from the almost universal British practice of working express passenger trains with six-coupled engines and began working certain heavy Scottish trains over a difficult route by means of 2-8-2 engines *Cock o' the North* and *Earl Marischal*. The construction in 1936 of four more engines of a generally similar design, but with the front end streamlined to resemble the *Silver Link*, seemed to indicate that eight-coupled passenger engines had found an established place on at least one of the British railways. However, it has been common knowledge for some time past, that one of these 2-8-2 type engines was undergoing conversion to make it into a Pacific; this work has now been completed and the engine, No. 2005, is already in service in the Scottish Area. The other five engines eventually will be similarly converted to the 4-6-2 wheel arrangement. Thus a small but famous class will shortly be no more than a memory, the bold experiment of a designer who did much to develop British locomotive capacity in his lifetime.

As originally built, the second, or 1936 batch of eight-coupled engines were described in *The Railway Gazette* for July 3, 1936. Principal particulars are shown below and in the diagram which we reproduce again for purposes of comparison. In unconverted engines the leading pony-truck is of the double swing-link type with a translation of $5\frac{1}{2}$ in. each side of the centre line. The trailing carrying axle is fitted with Cartazzi axleboxes which give a side translation of 3 in. on either side of the centre position. Notwithstanding these provisions for greater flexibility the range of operation of the engines is somewhat limited and it was felt by the present Chief Mechanical Engineer, Mr. E. Thompson, that they would be more useful if they were converted. Engine No. 2005 has had its rigid wheelbase reduced by the conversion from 19 ft. 6 in. to 13 ft. which gives it much more freedom on the curves that abound on the L.N.E.R. Scottish lines.

The new bogie, which takes the place of the existing pony-truck and leading coupled wheels, has the horns, stays, and central control arrangements all of welded construction. The bogie is of the side-support pattern taking the weight of the main frame through spherical surfaces on to bronze slippers. The centre line of these slippers is in direct line with the main bogie frame. The side control of the bogie is by means of helical springs, which give an initial control load of 2 tons; the maximum translation of the bogie is 4 in. either side of the engine centre line.

The original engine already incorporated a spliced front-end portion to the main frame so that the renewal of only this front end was necessary; the frame from immediately behind the original leading coupled wheels backward has been retained unaltered.

Although as many as possible of the original parts, including the outside coupling and connecting rods and the outside motion details, have been used again, the conversion has included the elimination of the 2 to 1 lever gear and the addition of a separate Walschaerts gear for operating the valve on the inside cylinder. The new inside motion plate thus made necessary forms the main front-end support for the boiler; it is of welded construction, thereby eliminating the need for providing any new cast-steel frame stays.

The main drive has been divided between the leading and second pair of coupled wheels; the outside cylinders drive on the second pair of coupled

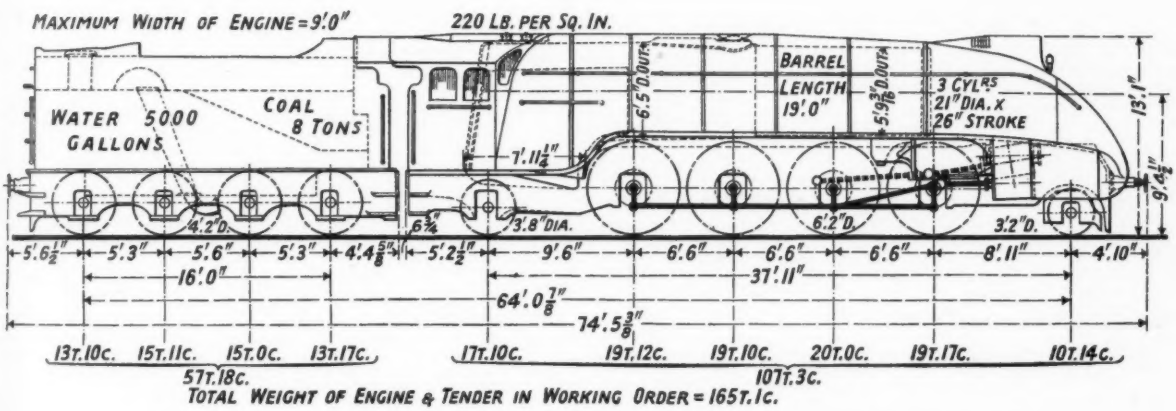


Diagram showing principal dimensions and weights of the locomotive before conversion

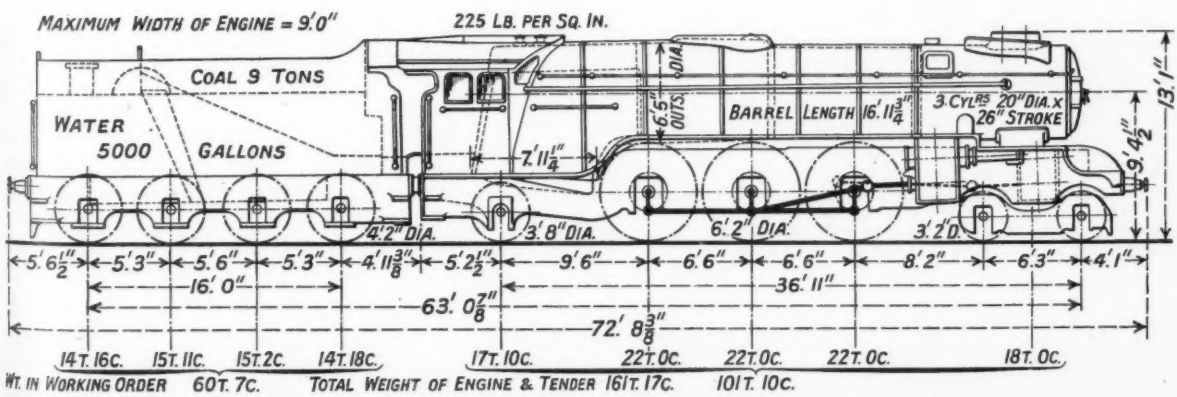
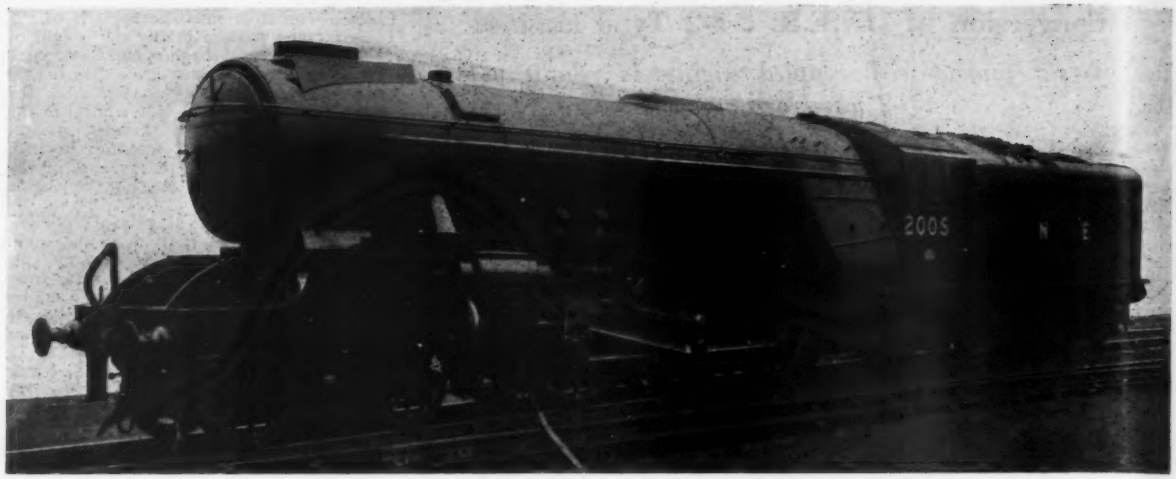


Diagram showing principal dimensions and weights of the locomotive after conversion

XUM



Former class "P2" 2-8-2 locomotive No. 2005 rebuilt as a 4-6-2 and reclassified "A2"

wheels and the inside cylinder on the leading pair. The standard form of built-up crank axle, on which extensions to the webs form balanced weights, has been retained and the new eccentric, which has a throw of 4½ in., is fitted on to this crank axle. The exhaust passage from the outside cylinders is taken outside the main frames to the inside cylinder casting; this enables a single blast-pipe base in the new all-welded smokebox to take a double blast-pipe and chimney similar to that fitted to the other 2-8-2 engines in service in Scotland. To straighten out the steam pipes, the boiler barrel was shortened somewhat and the length between the tubeplates is now 17 ft.

It will be noticed that advantage has been taken of the present opportunity to improve the steam distribution by employing larger piston valves having longer maximum travel and independent actuation. There has been no change in the steam lap, which remains 1⅛ in., so that wider port openings are obtainable and cut-off in full gear occurs at 75 per cent. piston stroke instead of at 65 per cent. as in the original design.

The maximum axle weight of 22 tons is as nearly as can be measured the same as that of the "A3" and "V2" class engines; the adhesion weight is also the same to within a few hundredweight, but the use of 20-in. cylinders in conjunction with driving wheels of 6 ft. 2 in. dia. brings the ratio of adhesion weight to tractive effort down to 3·67. In the original engine it was 4·06; in the "A3" and "V2" class engines it is 4·5 and 4·36 respectively.

In the table below a comparison is made between the principal weights, dimensions, and so on for the rebuilt locomotive and the original.

PRINCIPAL PARTICULARS

	Rebuilt engine	Engine as originally built
Cylinders (3), dia.	20 in.	21 in.
,, stroke	26 in.	26 in.
Piston valves, dia.	10 in.	9 in.
,, ,, max. travel	6½ in.	5½ in.
Coupled wheels, dia.	6 ft. 2 in.	6 ft. 2 in.
Evaporative heating surface, tubes	2,216 sq. ft.	2,477 sq. ft.
,, ,, ,, firebox	237 sq. ft.	237 sq. ft.
,, ,, ,, Total	2,453 sq. ft.	2,714 sq. ft.
Superheating surface	680 sq. ft.	777 sq. ft.
,, Combined total	3,133 sq. ft.	3,491 sq. ft.
Firegrate area	50 sq. ft.	50 sq. ft.
Boiler pressure, per sq. in.	225 lb.	220 lb.
Tractive effort (at 85 per cent. boiler pressure)	40,318 lb.	43,462 lb.
Adhesion weight	66 tons	79 tons
Weight of engine in working order	101¼ tons	107½ tons
Water capacity of tender	5,000 gal.	5,000 gal.
Coal capacity of tender	9 tons	9 tons
Weight of tender, full	60½ tons	60½ tons
Total weight of engine and tender	161¾ tons	167½ tons

Night Welding of Battered Rail-Ends

The Delaware, Lackawanna & Western RR. is building up battered rail-ends by night

THE building up of the battered running surfaces of flat-bottom rails at the joints has been developed in two ways by the Delaware, Lackawanna & Western Railroad of the U.S.A. The first method consists in the use of some small "off-track" welding units, like those used in Great Britain for welding work *in situ* on crossing noses and wings; the gangs in the units consist of three or four men, whose gas cylinders and other appliances are carried on self-propelled off-track trucks. The second method is by means of larger "on-track" units, which require complete possession of either the tracks on which work is in progress, or of adjacent tracks. Such units are used in the daytime in yards, where it is not difficult to obtain possession of a yard track for the push-truck carrying the equipment; but the most interesting methods which have been developed are those for use at night on running lines. The Lackawanna operates a frequent electric-train service out of its Hoboken terminal, with density during the daylight hours which cannot be interrupted; and here the rail-end welding is carried on at night, when complete possession of individual tracks is obtainable.

The organisation is built around four welders, who work in pairs; each pair is provided with a push-truck carrying sufficient oxygen and acetylene gas for the night's work, and with 50 ft. hose lengths. Each pair of welders builds up the rail-ends in alternate groups of four joints, two in each rail. The acetylene cylinders are enclosed in metal boxes, which are heated in cold weather by piping into them by flexible connections, the exhaust from one of the motorcars of the welding train. Following the welders are two Nordberg surface grinders, each with an operator and a helper or pusher. As with all rail-surface grinders used on the Lackawanna, these are provided with an attachment which automatically regulates the depth of the grinding operation; the stop is effected by a vertical spacer bolt extending through a sleeve fastened to the grinding-wheel guard, and provided with a lock-nut and a steel ball inset at the lower end which permits it to roll freely on the rail surface. To set the stop for the grinder, it is turned down until the lower end comes into contact with the rail surface at a point clear of the weld limit, and a level surface through the weld thus is automatically ensured. At about every third or fourth joint the stop is re-set, to ensure complete accuracy. Behind the two surface-grinders comes a double-head cross-grinder, with one operator, who cross-grinds the joints in both rails.

For illumination, each surface grinder is equipped with two motorcar spotlights, a generator, and a storage battery, so located that one illuminates the grinding, the other the top surface of the finished rails for testing with a straight-edge.

Rail-ends are built up as soon as the depth of the depression attains 0.025 in. to 0.030 in., and in the 9 hr. from 8 p.m. to 5 a.m., with 30 min. off for a meal at midnight, a mile of track, laid with 39-ft. rails, can be dealt with. The complete train of push-trucks, which includes tool-box and other vehicles beyond those mentioned, is moved by two motorcars, one at each end, with automobile headlamps.

American Troop Kitchen Cars

American troop kitchen cars are being built to a design based on the standard 50-ft. 6-in. all-steel box wagon

THE first of the specially-built kitchen cars, of which 400 are on order in the United States for the Defense Plant Corporation to accompany the 1,200 troop sleeping cars now building, was completed at the Chicago plant of the American Car & Foundry Company towards the end of October last, and was exhibited in Washington on October 26. Forty similar cars are being built for use with hospital trains. The structural design of the troop kitchen car follows in general the standard 50-ft. 6-in. all-steel box wagon, so that after the war these vehicles may be converted readily to express cars with 8-ft. side doors for passenger train service, or to bogie box wagons, as may be required. To conform to these requirements, the cars are fitted with high-speed bogies, end framing, and Pullman vestibules, as with standard passenger stock. Externally the vehicles have high straight steel sides, like those of the troop sleepers, and small shallow windows roughly half-way up the body of the car. There are six windows on each side, together with a window in the central door. Each window has a sliding sash which can be raised, and an overlapping roller-blind for blackout purposes. There are also eleven exhaust ventilators in the roof.

Before the building of these cars, which are being turned out at the rate of 30 a week until completion, catering on troop trains was effected from baggage cars temporarily equipped with portable coal-ranges, refrigerators, and other equipment, supplied by the army unit concerned. On arrival at destination, the unit removed the cooking equipment, leaving the car bare for the next user. The new kitchen cars have permanent equipment, capable of furnishing meals to 250 men simultaneously, and the only stocking done by mess sergeants is with food and cooking utensils. Paper cups and plates are used, and bread and butter are both served in paper cartons. The hot meals are served from stock-pots carried in each direction from the kitchen car (which is marshalled in the centre of the troop train) by two men, with a third to serve; dessert and coffee are dispensed in the same way. After the meal is served, a kitchen orderly crew proceeds through the train gathering up all scraps for disposal by burning or otherwise.

Interior of new American troop kitchen car showing compact and well-planned equipment for serving meals to 250 men simultaneously

The fixed cooking equipment includes two U.S. Army standard coal ranges connected in tandem with canopy over; each range is provided with a water-back and the smoke-pipes from both are led to a chimney of the positive exhaust type. A coalbox of ½-ton capacity is provided opposite the ranges, and is loaded through a roof hatch. A refrigerator is installed, with two ice wells of 7½ cu. ft. capacity each, and with a food compartment between of 15½ cu. ft. capacity. There are separate water supplies for the sinks, and for a showerbath provided at one end of the car for the use of the crew; for the former, two 200-gal. cold-water tanks and one 40-gal. hot-water tank are provided, and, for the latter, one 80-gal. cold and one 30-gal. hot-water tank. Water heating is partly from the steam-heating system of the car, and partly from the water-backs of the cooking ranges; the hot-water supply to the shower is thermostatically controlled to prevent scalding. Ample cupboard space, shelving, and drawers are provided throughout the length of the car, which, with its interior length of 50 ft. 6 in., width of 9 ft. 1½ in., and height of 9 ft. 4 in., is considerably more commodious than the average American dining-car kitchen. Lighting is by means of a battery system, supplying current at 6 volts; this has an estimated life, with a normal lighting demand, of six months.

MAXIMUM STANDARD OF LIGHTING.—The Minister of Fuel & Power, under the Control of Fuel (No. 3) Order, 1942, has given a General Direction (Standard of Lighting) No. 2 (S.R. & O. 1944, No. 234), which amends the General Direction (Standard of Lighting) No. 1 (S.R. & O. 1943, No. 1210) laying down maximum standards of illumination in various public premises. The amendment provides that, as from March 20 last, the maximum standard of lighting in any room, compartment or enclosed space be calculated separately, and be unaffected by the fact that the lighting used also may incidentally illuminate some other place. Copies of the Direction may be obtained from H.M. Stationery Office, Kingsway, London, W.C.2, price 1d. each.

CENTRAL ARGENTINE RAILWAY STAFF AIDS RED CROSS.—The non-British staff of the Central Argentine Railway, which already has raised some £17,600 towards the purchase of foodstuffs for prisoners of war, has subscribed a further sum of £2,353 for the same purpose; and a cheque for this amount was handed to Sir Montague Eddy, Chairman of the Buenos Ayres Great Southern Railway Co. Ltd. and Buenos Ayres Western Railway Limited, and a Director of the Central Argentine Railway, Limited, in his capacity of Deputy-Chairman of the British Red Cross Prisoners of War Fund, at a ceremony held at the C.A.R. terminus in Buenos Aires on December 7 last.

Those present at the gathering included Lord Forres and Mr. H. C. Drayton, Directors of the Central Argentine Railway Limited; Dr. Pedro T. Vignau, President of the Argentine Red Cross; representatives of the British Embassy; and prominent officials.

[*The Scotsman* Photo]

A pre-blackout view of Waverley Station, Edinburgh, L.N.E.R. The need to dispense with lighting at night has been one of the most serious disadvantages suffered by the railways during the war, as is made clear in "British Railways in Peace and War," from which the above illustration is reproduced

RAILWAY NEWS SECTION

PERSONAL

Sir William Stanier has been elected a Fellow of the Royal Society. Sir William Stanier is Chief Mechanical Engineer of the L.M.S.R., and in September, 1942, was seconded to the staff of the Minister of Production as a Scientific Adviser. He is the second locomotive engineer to be made a Fellow of the Royal Society; the first was Robert Stephenson.

The King has ordered the following appointments to the honour of O.B.E. to be made for services to the Forces and in connection with military operations:—(1) to Mr. Richard Lindsay Cooke, Divisional Traffic Superintendent, Gabarry, Egyptian State Railways, for services in the provision of railway transport; and (2) to Mr. Jaspar Wyndham Macaldin, Deputy Chief Engineer, Egyptian State Railways, for services in the completion of railway construction works.

CANADIAN PACIFIC RAILWAY

Mr. H. G. Dring, European Passenger Manager, Canadian Pacific Railway, is retiring on March 31, after 47 years' service.

Mr. A. L. Rawlinson, Assistant European Passenger Manager, has been appointed to succeed Mr. Dring as European Passenger Manager, as from April 1. The position of Assistant European Passenger Manager is abolished.

CANADIAN NATIONAL RAILWAYS

Mr. Evan B. Hawken, Staff Registrar, Canadian National Railways, has been appointed Assistant Secretary to the company. He retains the position of Staff Registrar.

We regret to record the death on March 3, at the age of 69, of Mr. Alfred Dale-Green, V.D., formerly Deputy Chief Operating Superintendent, North Western Railway (India), who retired in 1929.

The Ministry of Production has consented to release Sir William Palmer for the post of Principal Industrial Adviser to the Board of Trade. He will be concerned specially with major questions on industrial reconstruction policy in connection with the engineering and other industries at present mainly engaged on war production.

We regret to record the death on March 11 of Lord Airedale, a Director of the Midland Bank Limited, and formerly a Director of the Monk Bridge Iron & Steel Co. Ltd. The Rt. Hon. Sir Albert Ernest Kitson, Bt., second Baron Airedale of Gledhow, was born in 1863, and was educated at Rugby and at Trinity College, Cambridge; he entered the iron and steel manufacturing business of his father, the late Sir James Kitson (afterwards first Baron Airedale), founder of the Airedale Foundry and the Monk Bridge Iron & Steel Works, both at Leeds. Lord Airedale was made an Honorary Vice-President of the Iron & Steel Institute in 1926. He succeeded his father in 1911.

We regret to record the death on March 3 of Mr. Cecil Broadhurst, Advertising Manager of C.A.V. Limited.

Mr. H. N. Sporborg, who, as recorded in our last week's issue, has been elected Chairman of the British Thomson-Houston Co. Ltd., has been actively connected with the company since 1902, when he became Manager of the Traction Engineering Department. He became Chief Engineer of the company in 1907, and joined the board in 1909. He has been a Director of the Metropolitan-Vickers Electrical Co. Ltd. since 1929, and a Director of Associated Electrical Industries Limited since 1939. Mr. Sporborg has also been appointed Vice-Chairman,

Mr. H. N. Sporborg

Elected Chairman of the British Thomson-Houston Co. Ltd.

and a member of the executive committee of Associated Electrical Industries Limited.

Mr. C. K. F. Hague, Deputy Managing Director of Babcock & Wilcox Limited, has been appointed the Member for Great Britain of the Public Utilities Committee formed last December by the Combined Production & Resources Board. He will leave this country shortly to take up his duties in Washington.

We regret to record the death on March 16, at the age of 61, of Mr. Joseph Bartlett Eastman, Director of Defense Transportation, U.S.A. He had been a Member of the Interstate Commerce Commission since 1919, and was Chairman in 1927 and in 1940-41. Mr. Eastman was Federal Co-ordinator of Transportation from 1933, when that office was created by the Emergency Transportation Act, until 1936, when the post lapsed.

(*See editorial note, page* 301)

Mr. Guillermo J. White, a member of the local committee in Argentina of the Buenos Ayres Great Southern Railway Co. Ltd., and of the Buenos Ayres Western Railway Limited, is retiring for reasons of health. Mr. White, who is 63, is a son of the late Mr. Guillermo White, the eminent Argentine railway engineer, who was President of the local board of the B.A.G.S.R. from 1887 to 1917. Mr. G. J. White graduated as a civil engineer at the University of Buenos Aires in 1904. He was appointed to the local committee of the B.A.G.S.R. in 1927, and nine years later to that of the B.A.W.R. He was a Director of the Buenos Ayres Southern Dock Co. Ltd. and the Bahia Blanca Electric Company.

We regret to record the death on March 7 of Mr. Henry Batten Huddleston, O.B.E., V.D., who was Agent of the Burma Railways from 1915 until his retirement in March, 1920. He then was elected to the board, on which he remained until the working of the system was taken over by the Government on January 1, 1929.

The King has recently awarded the Imperial Service Medal to six employees of the Transport Department of Tasmania.

We regret to record the death on March 11 of Mr. Ernest Edgar Burn-Bailey, formerly Chief Auditor, South Indian Railway, who retired in 1919.

The late Mr. F. H. Willis, who was Secretary to the Southern Railway Company from 1930 to 1936, left £15,338.

We regret to record the death on March 2 of Colonel R. Howell Davies, D.S.O., Divisional Road Engineer, North Western Area, Ministry of War Transport.

General Juan Pistani, a distinguished military engineer, has been appointed Minister of Public Works, Argentina, in place of Captain Ricardo Vago, who, as recorded in our January 14 issue, recently resigned from that position.

We regret to record the death on March 1, at the age of 70, of Mr. Edward A. Bly, M.B.E., who, after joining the Ministry of Transport from the Admiralty, became Engineer & Manager of the Crinan Canal in 1921, when the administration of the canal had been taken over by the Ministry. He retired in 1939, but returned to the Managership on wartime service in 1942.

The late Sir James Fortescue-Flannery, who was Chairman of Callender's Cable & Construction Co. Ltd., left £419,160.

L.N.E.R. APPOINTMENT

The L.N.E.R. announces that Mr. W. W. Capon, Stationmaster, Sheffield (Victoria), has been appointed Stationmaster, Marylebone.

The late the Rt. Hon. the Earl of Plymouth, a former Parliamentary Secretary to the Ministry of Transport, whose father was a Director of the Great Western Railway Company, left £1,204,428.

Sir Oliver Simmonds, M.P., has been re-elected Chairman, and Captain A. G. Lamplugh and Captain B. H. Peter, C.B.E., have been re-elected Deputy Chairmen, of the Joint Air Transport Committee which represents the Association of British Chambers of Commerce, the Federation of British Industries, and the London Chamber of Commerce. This committee was formed early in 1943 to consider the post-war development of British civil aviation.

Sir Follett Holt

We regret to record the death on March 20 of Sir Follett Holt, K.B.E., M.Inst.C.E., F.C.G.I., Chairman of the Argentine North Eastern Railway Co. Ltd. and the Entre Rios Railways Co. Ltd. Sir Follett Holt was born on December 4, 1865, the fifth son of the late Mr. Robert Hallett Holt, the Land Titles Commissioner for England. He was educated at Merchant Taylors School and then studied at the City & Guilds Engineering College before serving his time in the Nine Elms Shops of the L.S.W.R. In 1887 he joined the staff of Sir Alexander Rendel, Consulting Engineer, and two years later accepted an appointment as an assistant in the Locomotive Department of the Buenos Ayres & Rosario Railway, of which line he eventually rose to be Acting Locomotive Superintendent.

In 1897 he was appointed General Manager & Chief Engineer of the Great Western of Brazil Railway, but he returned to Argentina three years later to take up a similar position on the Entre Rios Railways. There he designed and built the train-ferry system of the railway. In 1910 he returned to London on being elected a Director of the last-named company, of which he became Chairman two years later. Subsequently he paid numerous extended visits to, and kept in close contact with, South America.

Early in 1915 he went to the War Office and joined Mr. G. M. Booth in organising shell production. He subsequently became a settler under the Munitions Levy Act and eventually a Financial Adviser to the Coal Controller. In 1916 he induced the Government to instal the Channel Ferry. Early in 1918 Sir Follett Holt became Commercial Member of His Majesty's Diplomatic & Commercial Mission to the South American Republics. He was made K.B.E. in the New Year Honours of 1934.

Sir Follett Holt was a former Chairman of the Buenos Ayres Great Southern Railway Co. Ltd., Buenos Ayres Western Railway Limited, Great Western of Brazil Railway Co. Ltd., Southern San Paulo Railway Co. Ltd., and Pará Electric Railways & Lighting Co. Ltd.; and a former Director of the Buenos Ayres & Pacific Railway Co. Ltd., Midland Uruguay Railway Co. Ltd., Uruguay Northern Railway Co. Ltd., and Argentine Transandine Railway Co. Ltd. He was an original Director of Transport (1910) Limited, the company owning *The Railway Gazette*.

When in 1940 Sir Follett Holt intimated his desire to resign the Chairmanship of the Buenos Ayres Great Southern and Buenos Ayres Western Railway Companies, keen regret was felt by all concerned. At the meeting of the former company in London on October 29, 1941, Sir Montague Eddy referred to the fact that at the last meeting Sir Follett Holt had presided and had asked to be released from the heavy work entailed by the joint Chairmanships of the two companies, and said that the directors had hoped that Sir Follett would have been able to assist them as a member of the board; but that on reflection he had decided to retire, in order to give his successor a free hand. Fortunately, as Chairman of the Entre Rios and Argentine North Eastern Railway Companies, and an active member of the British-Argentine Railway Committee, his counsel was still at their service.

At the time of his death Sir Follett Holt was Chairman, in addition to the Argentine North Eastern and Entre Rios Companies, of the British Shareholders Trust Limited and Cordoba Central Trust Limited, and was Chairman & Managing Director of the Pullman Car Co. Ltd. He was a Director of many companies, including the Bahia Blanca & North Western Railway Co. Ltd., Bank of London & South America Limited, Barclays Bank Limited, Central Uruguay Railway Co. of Monte Video Ltd., North Western of Uruguay Railway Co. Ltd., and Rosario Drainage Co. Ltd.

From 1931 to 1934 Sir Follett Holt was a member of the Advisory Council to the Board of Trade, and in 1931 he was Chairman of the London Executive Committee of the British Empire Trade Exhibition in Buenos Aires. He served in 1933 as Chairman of the Frozen Pesos Committee under the United Kingdom & Argentine Convention. In his younger days, Sir Follett Holt was for three years a member of the winning team of the Polo Championship of the River Plate.

(*See editorial note, page* 301)

The late Sir Follett Holt

Chairman, B.A. Great Southern Railway Co. Ltd., 1934-40
Chairman, B.A. Western Railway Limited, 1927-40
Chairman, Entre Rios Railways Co. Ltd., 1912-44

The late Sir Robert Hilton, who was Deputy-Chairman of United Steel Cos. Ltd. and had been Deputy-Chairman & Managing Director of Metropolitan-Vickers Electrical Co. Ltd., left £24,250.

Institute of Transport

Among those elected recently to membership of the Institute of Transport are Messrs. J. W. Bayley, Managing Director, Ellerman's Wilson Line Limited; S. Berkeley, Director & General Manager, Belfast Steamship Co. Ltd.; F. H. Dawson, Assistant Director of Sea Transport, Ministry of War Transport; R. Flack, Chief Accountant, Central Argentine Railway; Colonel E. Gore-Browne, Chairman, Southern Railway Company; Messrs. G. J. Harris, Accountant, Northern Counties Committee, L.M.S.R.; R. J. Hodges, General Manager & Secretary, Mersey Docks & Harbour Board; B. X. Jessop, District Superintendent, Sunderland, L.N.E.R.; L. J. L. Lean, Dock Manager, Plymouth, G.W.R.; F. B. Lowry, Transport Superintendent, Buenos Ayres & Pacific Railway; A. McCleery, Operating Superintendent, Northern Counties Committee, L.M.S.R.; R. H. Mayo, Technical Adviser, British Overseas Airways Corporation; L. Roberts, General Manager, Manchester Ship Canal; H. R. Statham, Acting District Goods Manager, Leeds, L.N.E.R.; W. E. Tremain, Chief Telegraph Engineer, Buenos Ayres & Pacific Railway; and J. Wilson, General Manager & Secretary, Clyde Navigation Trust. Those elected to associate membership include Messrs. J. G. T. Anderson, Assistant Secretary, and W. H. Duncan, Accountant, Northern Ireland Road Transport Board; J. Farquhar, Assistant Divisional Road Haulage Officer, Scotland; G. D. D. Greig, Engineer's Assistant, Glasgow, L.N.E.R.; W. S. Marshall, Assistant Operating Superintendent, Northern Counties Committee, L.M.S.R.; H. Mayo, Chief Assistant to Regional Transport Commissioner, North Midland Region, Ministry of War Transport; A. Moss, Assistant to Engineer (Signals), London, L.N.E.R.; J. T. E. Robinson, Assistant Traffic Manager, West Yorkshire Road Car Co. Ltd:; G. T. Simpson, Chief Traffic Manager, Jodhpur Railway; and R. L. Streight, Chief of Rates & Fares Department, Northern Ireland Road Transport Board.

Mr. A. C. Macdiarmid, Chairman & General Managing Director of Stewarts and Lloyds Limited, and a Vice-President of the British Employers' Confederation, has been unanimously elected President of the British Iron & Steel Federation, in succession to Sir James Lithgow, who has been President of the Federation since February, 1942. Mr. Macdiarmid is also a Director, among other companies, of Richard Thomas & Co. Ltd.; Stanton Ironworks Co. Ltd. (Chairman); and United Steel Co's. Ltd.

It is reported that Señor G. P. Conesa and Señor F. J. Marquina have resigned their positions as President of the Council of Administration, and General Manager, respectively, of the National System of Spanish Railways. Señor E. A. Quintanilla has been appointed President, and Señor J. M. Rivèro de Aguilar, General Manager; the latter was representative of the Ministry of Defence on the Council of Administration.

TRANSPORT SERVICES AND THE WAR—234

Easter Travel Restrictions

Those planning an Easter away from home are warned by the Ministry of War Transport that there is no guarantee that the trains will be able to carry them, and that, if they go, they may have difficulty in getting back. On the roads no special

services can be provided to facilitate holiday travel.

The calls on locomotives and engine crews for essential purposes are heavier than ever, and, to ensure that demands are met, the Minister of War Transport has directed that during the six days from Thursday, April 6, to Tuesday, April 11, inclusive, the total number of long-distance trains run, and the total mileage covered on any day, will be no greater than on an ordinary weekday or Sunday, as the case may be, in March of last year. In other words, though some long-distance services may be strengthened at the expense of others, the total accommodation for long-distance passengers will be the same as on an ordinary working day or Sunday.

Workmen's tickets will be issued during the Easter week-end as on a normal weekday or Sunday.

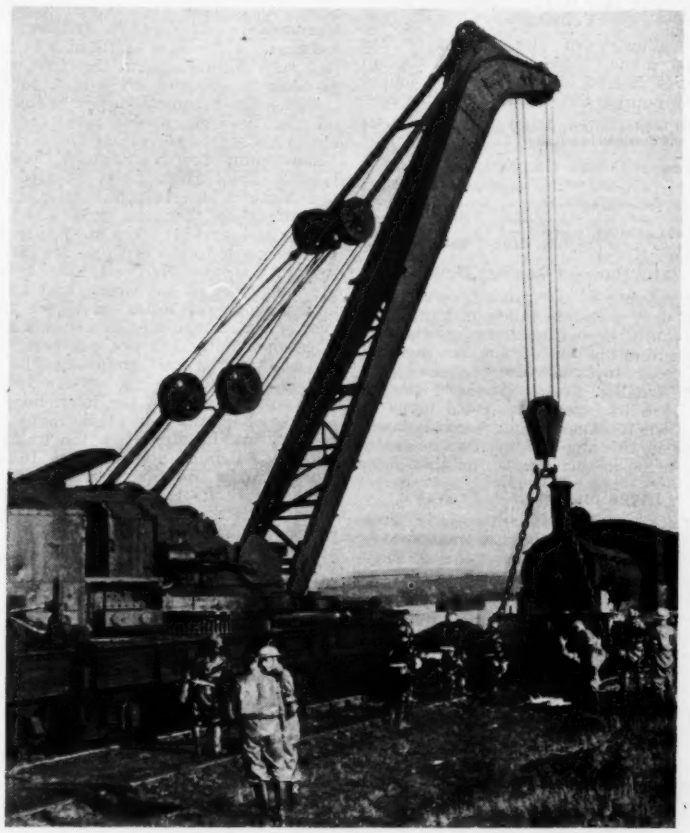
Steps taken to ease the pressure on railways during the period April 6 to April 11 include the following: Boarding schools have been asked to break-up not later than March 31; leave travel by members of the Services will be reduced to the minimum; and free or assisted travel arrangements will be suspended. Among those affected by the last-named provision are transferred industrial workers, transferred and evacuated Civil Servants, transferred personnel of N.F.S., Civil Defence, and Police War Reserve, and relations visiting evacuees.

Locomotive Re-Railing under Gas

An exercise was held recently on the L.N.E.R. to demonstrate the re-railing of a locomotive and wagons under blister gas conditions. It was assumed that, as a result of enemy attack, a gas bomb had fallen on the line and, by reason of the small crater made, a locomotive and 4 wagons had been de-railed. The area of damage and the vehicles had been contaminated by actual mustard gas, and the purpose of the exercise was to test the reactions of the men and appliances under gas warfare conditions. The results were deemed eminently satisfactory.

Trains of Coal Lorries

Road vehicles are being used for the first time in this country to move coal from the coal face. They are moving it at the rate of 100,000 tons a week, and this figure is expected to rise to 500,000 tons as weather improves and workings are extended. The necessity for road transport arises from the development of open-cast workings, which are not rail-connected. Mechanical diggers excavate the coal and swing it direct into tippers for dispatch to railheads, stocking



L.N.E.R. re-railing exercise under war-gas conditions at Picketts Lock

Locomotive re-railing exercise on the L.N.E.R. at Picketts Lock under war-gas conditions

sites, or, in some instances, direct to industrial consumers. The fleet of more than 750 road vehicles now being used for this purpose, will eventually total about 4,000.

Journeys to railheads average about five miles, but for deliveries direct to consumers may be 50 miles. The provision of the road vehicles is the responsibility, in most areas, of the Government Road Haulage Organisation, which has appointed traffic movement officers in the North Midlands to supervise operations and to ensure that transport is available. New roads, totalling many miles, have been built by the Ministry of Works to give access to these coal workings. Both roads and workings are temporary; as soon as the coal seams are exhausted, the surface of the ground is reinstated and the field made available for crops.

Civilian Air Raid Casualties in February

The Ministry of Home Security has announced the following figures of civilian casualties due to air raids in the United Kingdom during the month of February :—

Killed (or missing believed killed)	961
Injured and detained in hospital	1,712

The casualties are classified as follow :—

	Men	Women	Under 16
Killed (or missing believed killed)	350	475	136
Injured and detained in hospital...	716	811	185

The Banned Coastal Belt

For reasons of operational security, a coastal belt about 10 miles in depth, but considerably deeper at some points, extending from the Wash, round the east and south coasts to Land's End, together with certain smaller areas on the Firth of Forth, are to become protected areas as from April 1. Apart from specified classes of persons, this amounts to a ban on entering or being in such areas after that date.

"Invasion Front" Travel

Various official reminders have been given recently that public transport in some areas may be disorganised drastically and without notice, when the invasion of the European Continent begins. Some railways may be closed to all but vital war traffic, possibly as a temporary measure lasting only a few days. Certain areas may also be subjected to a "stand-still" Order, so far as civilian traffic is concerned. The Regional Commissioner in Scotland has stated that there is likely to be "exclusive priority for military traffic, lightning cancellation of civilian services, and overnight travel regulations affecting everyone, war workers included."

The Minister of Production has stressed the need to lighten the lot of the transport system by reducing still further the turn-round time of wagons at factories, and said that rapid clearance of wagons should be regarded as one of the first charges on the labour available. The Ministry of Production has gone to considerable lengths to prevent new contracts being placed in districts where all available local labour supplies have been exhausted.

Holiday Travel to Arran

The L.M.S.R. has announced that passenger bookings to Arran will be controlled this year during the period from April 7 to September 25. To facilitate the arrangements of passengers who must travel, tickets will be issued in advance at Glasgow (St. Enoch) on specified advance days for travel on other specified dates. Tickets will also be issued as usual on the day of travel, provided the maximum number for any particular service has not already been issued in advance under the scheme. No tickets will be issued from any station in Scotland excepting Glasgow (St. Enoch), Paisley Canal, and Fairlie Pier. Postal applications for tickets from places within a reasonable distance of Glasgow will not be accepted. No block lots of tickets will be issued, and tickets will not be recognised on any day or by any service other than that for which they are issued. Restrictions on passenger bookings to other Clyde Coast places will begin in June, and details will be announced later.

L.N.E.R. and L.M.S.R. Train Service Alterations

From March 6 the L.N.E.R. has been running an express at 8.10 p.m. on Sundays from Liverpool Street to Bishops Stortford, Audley End, Whittlesford, and Cambridge. This train relieves the 8.6 p.m., which now starts at 8.14 p.m., and runs 8 min. later; the former also gives an acceleration of 17 min. to Cambridge. On Saturdays a fast connection, off the 10 a.m. Flying Scotsman from Kings Cross, is run from Grantham at 12.35 p.m. to Nottingham, reaching London Road High Level at 1.10 p.m. and Victoria at 1.16 p.m. An alteration of interest is that the 9.35 a.m. (late 9.20 a.m.) and 11.50 a.m. trains from Peterborough to Kings Cross are diverted to run *via* the Hertford loop between Stevenage and Wood Green, and are the first through main-line passenger trains ever sheduled regularly to use this route. The opportunity has not yet been taken of stopping these trains at Hertford (North), to improve the service between the county town and the main line, and for the 30¾ miles by this route from Hitchin to Finsbury Park the trains are allowed 54 min. non-stop, or 16 min. more than by the direct route.

On the L.M.S.R. there are few alterations of note. From April 1 a revised service operates between Dalston Junction and Poplar, as a result of the closing of Victoria Park station; from April 3 the Wirral electric service is generally revised; and from April 3 also the spring services of the Clyde steamers come into operation, with additional connecting trains to and from Glasgow on Saturdays, Sundays, and Mondays from April 8, 9, and 10, respectively, and further additions from April 23.

Gestapo on Scandinavian Train Ferries

The Swedish Foreign Office has publicly endorsed the action of the Halsingborg police who boarded the Danish train-ferry from Elsinore on March 10 when it arrived on the Swedish side of the Sound; disarmed two German Gestapo men in civilian clothes, and locked them in a cabin on board until the ferry left. In response to a Gestapo protest, the Halsingborg Police Superintendent said that while the ferry was in a Swedish port the Swedish authorities would not permit German agents to prevent possible refugees from leaving the ferry.

German Combined Carriages and Wagons

To assist the Reichsbahn to cope with its serious rolling-stock position, new types of vehicle have been evolved which are a combination of goods and passenger vehicle that may be converted in 15 min. The heating installation, provided mainly for the use as a passenger carriage, is also of advantage for the conveyance of goods which must be protected from cold. The load capacity of the vehicle is 19 *tonnes*; when used as a passenger carriage, there is seating accommodation for 45 persons.

Another type of passenger carriage has been developed from the so-called wartime covered goods wagon; and a third, somewhat improved, type of passenger carriage is now being evolved. The large-scale production of these three types has been announced for the near future. Their designs provide for the utmost economy in materials for undercarriage, body, and equipment.

German "Austerity" Sleeper

An "austerity" sleeping car has been developed by the Reichsbahn for the use of soldiers on leave, many of whom are said to travel as many as five days and nights before they reach home or the fighting zone. These sleeping cars, called officially *Liegewagen* (lying cars), comprise 33 bunks arranged in tiers of three. They may also be used for seating 33. There is stated to be adequate luggage space, a peg for clothing, and a rifle holder for every traveller.

The Railway in New Caledonia

U.S. Army railwaymen are operating the railway in New Caledonia, the French island in the South Pacific which now serves as a major distribution centre for troops and war material. In publishing an illustration showing a military train headed by an 0-6-0 tank locomotive, the *South African Railways and Harbours Magazine* stated recently that this railway had not been in use for decades, but this is a misconception of the position. The New Caledonia State Railway consists of 30 km. (18½ miles) of metre-gauge line extending from Nouméa to Paita. Its peacetime rolling stock consisted of 6 locomotives, 6 carriages, and 78 wagons. We are officially informed that "for technical and economic reasons" working was suspended on January 1, 1940. It was resumed in April, 1942, for Army traffic only.

"Black Market" Travel in the U.S.A.

Mr. J. Edgar Hoover, Chief of the Federal Bureau of Investigation, has begun a nation-wide drive to exterminate the "black market" in railway seat tickets in the U.S.A. Recently, 31 persons were arrested at Miami, Florida, on charges of dealing in the black market with seat reservations on trains. They are alleged to have been making a profit of between $15,000 and $20,000 a month, from tourists anxious to secure seats in the reduced train services now operating. Included among those arrested are 16 railway employees, 4 hotel servants, and a taxicab driver. The charges are based on a Federal law which prohibits the sale of railway tickets to one person at a higher price than that charged to another. According to the American daily press, Americans are engaged on what is described as "travel spree," and efforts to discourage pleasure travel have not proved particularly successful; with the reduced facilities at present available, there is thus a strong tendency for tickets to change hands at inflated prices.

New York City now has a local law which makes it a misdemeanour for individuals or business concerns to ask more than $1 service charge for supplying tickets or other accommodation for railway, bus, or air transport. The penalties are a $100 fine, imprisonment for 10 days, or both. This law was recently enacted by the City Council and signed by Mayor Fiorello H. LaGuardia, as a protection against reported instances of intermediaries who have been re-selling train seat reservations at "fancy" fees.

Great Southern Railways Company

Record traffics—Rate increases—Excessively low exceptional rates abolished—Capital reorganisation—Success of Mayo road scheme—Depreciation allowance—Reduction in costs—Skilful handling of traffic

The ordinary general meeting of the Great Southern Railways Company was held in Dublin on March 8. Mr. A. P. Reynolds, Chairman of the company, presided.

The Chairman said they had come through what might well be the most critical year in the history of transport in their country. The statement he made twelve months ago was regarded, he believed, by those stockholders who were present as a straightforward realisation of the serious position of the company at that time, but it was not the hopelessly pessimistic review it was represented to be by those who used extracts from it to criticise subsequent developments. Read as a whole it was, in the circumstances, an optimistic statement. At that time another bad year was under consideration, sufficient net revenue had not been earned to provide for deferred renewals, consequently no dividends were payable; and the revenue for the first two months of 1943 was considerably lower than that for the two corresponding months of 1942. He could not be expected to foretell that the country would be blessed with an abundant harvest; that the sugar beet yield this season would be the largest ever recorded; that a record tonnage of turf would be forthcoming; that the company would be able to handle successfully these huge traffics, and that, in spite of the late arrival of so many trains during 1942, public confidence would be so restored in 1943 that more than 2,000,000 additional passengers would need to be accommodated.

Increase of Rates

From the known facts it was obvious that an immediate increase in rates was essential if the company was to continue to exist, that if it was to prosper new capital would be required, that if new capital was to be procured it would need to be guaranteed, and that reasonable dividends would have to be paid on the existing as well as on the new capital. The first step was to obtain an Emergency Powers Order to increase rates, and they were increased as from July 1. Prior to the making of this Order railway rates could only be increased after application to the Railway Tribunal, and the Order protected this position by providing for an appeal to this tribunal. There were relatively few appeals and none was successful. Standard rates were provided for in one or other of the Railway Acts, but these comparatively high charges had not been generally applied, and before the making of the 1943 Order 85 per cent. of the company's traffic was carried at exceptional rates made many years ago, some of them as much as 80 per cent. below standard. These very low rates had now been substantially increased, nevertheless the varying increases would only produce a 20 per cent. increase in the total revenue derived from the carriage of merchandise. The cost of transport was an important factor in the economic life of a country and the successful transport company would earn sufficient net revenue to pay a moderate rate of interest on its capital if it could supply efficient services at low rates. The present level of charges was too high, but the cost of labour and materials was also abnormal. With improved methods and modern equipment charges in the future would be lower, and, in the meantime, even during the emergency period every endeavour would be made to adjust rates, but the ridiculously low exceptional rates would never be restored.

The Reorganisation Scheme

Regarding capital reconstruction, a scheme was prepared and submitted to stockholders and debenture-holders in the circular letter of October 26 last. Very few holders dissented, but counting all those who did not reply as against the scheme—he was certain many of them were not against it—63 per cent. of holders were for the scheme, only 1·29 per cent. definitely dissenting. No vote on any proposal submitted to the stockholders of the company on any subject ever before produced so high a percentage of votes. The scheme was duly accepted by the Government and would be included in transport legislation to be submitted in the near future to the Oireachtas. The stockholders of the Dublin United Transport Company had also accepted proposals for merging with this company in the proposed statutory company.

Arising out of the reconstruction proposals certain charges were made in the Dail and as they were the subject of a judicial inquiry he could only say that the violent language used by the deputies was to be deplored. Demands for an inquiry also came from a meeting of business men in Cork, where Mr. Eo'in O'Mahony was reported as having expressed erroneous opinions regarding the future payment of dividends. Mr. O'Mahony was associated with Colonel The O'Callaghan and others who, calling themselves Great Southern Railways Stockholders' Protection Association, professed support for the directors, and proceeded on every possible occasion to oppose the policy of the board.

Road Services

What were known as controlled areas were extended during the year and efforts had been made in certain quarters to depreciate the service rendered by the company in regard to them. Some two years ago the people of North Mayo found themselves without the transport services to which they had been accustomed. They had in normal times procured supplies from travelling shops and were assisted also by privately-owned lorries. As commodities became scarce and petrol had to be rationed it followed that the travelling shopkeeper sold his scarce commodities in the most easily accessible market and the private-lorry owner availed himself of his meagre ration of petrol to run his lorry exclusively for his own use. There was, not unnaturally, an outcry from the people of Mayo and the Government, by Emergency Powers Order, gave this company the task of distributing the available commodities equitably. The saving of petrol was not the primary reason for Government intervention but rather to use available petrol to give equal transport facilities to all the people, and so scheduled services were put into operation. These services eliminated unnecessary overlapping and uneven distribution caused by an excess of transport facilities in convenient districts and none at all in out-of-the-way areas. They also prevented the private haulier from selling to the highest bidder and to the detriment of all others the limited service he had to offer.

The Mayo experiment succeeded and was extended to other counties. There was, of course, opposition. In the last county to be controlled the lorry owners made such a fuss that the noise was heard in Dublin, and one newspaper went so far as to allege, with the usual scare headlines, that on the day the scheme was introduced into Kerry the company's hire charges were increased by £1 3s. 6d. a day. That was untrue and the false report later was used to bolster up a case against the transport merger. The truth was, as people in the controlled areas would confirm, that the company was rendering an excellent service to the community at rates much below those formerly charged by the private lorry owners.

Income Tax Adjustment

Dealing with the accounts the Chairman said that the directors recommended the payment of dividends on all the stocks. This was made possible because £125,754 was carried forward from last year against a proposed carry forward of £60,856 this year. While last year a sum of £84,000 was provided for income tax on current earnings and a similar provision this year would have taken £150,000, no such provision fortunately was necessary because it had been decided for the future to depreciate assets and claim for income tax purposes a fixed annual allowance for wear and tear instead of an allowance for actual renewals. Agreement on that matter had been reached with the revenue authorities and an allowance amounting to at least £170,000 for the three years to April 5, 1943, would be made to the company. The dividends would absorb £327,567, of which £150,000 would come from the tax adjustment and £64,898 from the carry forward. This left £112,669 to come from the net revenue earned during the year, after putting £550,000 to the railway renewals fund, which now stood at £850,000. It was estimated that the additional revenue arising from the increase in rates amounted to £285,000.

Savings in Working Costs

The price of coal was further increased during the year and only a very low-grade quality was available, but by using it to the best advantage the company not only improved the running of trains but saved, in spite of the increase in the cost per ton, about £50,000 in coal alone compared with the previous year. The better running of trains also eliminated to a large extent the payment of overtime, but this saving must be set against bonuses granted to the staff. Last year the wages content was 11s. 8d. in every £ of revenue. By reason, however, of the increase in gross revenue and the saving of overtime, the figure for this year was 10s. 3d. in the £ but this was still too high. In 1943 1,402,400 gallons of petrol were used by the company, compared with 1,610,981 gallons in 1942 and 1,830,254 gallons in 1941. It had fitted and was using 61 gas producers; a further 83 were being manufactured and when fitted one-third of the total fleet of lorries would be so equipped.

Pensions and Welfare Scheme

The Enginemen & Firemen's Fund, amounting to £150,000, had been wound up and it was proposed to introduce at

once a pensions and welfare scheme for all employees who were not members of the Railway Clearing System Superannuation Fund. This, it was estimated, would cost about £200,000 per annum. The company had refused to increase its annual contribution to this superannuation fund, but the members of it would not suffer.

More than 500,000 tons of beet were expeditiously transported by rail and road in a manner which, in normal times, would do credit to any transport organisation. The company handled by rail 512,807 tons of turf; 300,660 tons of other minerals; 1,600,834 tons of merchandise; the livestock carried was 1,516,195 and the total gross revenue, amounting to £6,239,322, was the highest in the history of the company.

The resolution for the adoption of the report and accounts was seconded by the Rt. Hon. James MacMahon and carried.

Mr. James P. Goodbody and Major Hugh A. Henry were re-elected directors.

Isle of Man Railway Company

The 74th annual general meeting of the Isle of Man Railway Company was held in the company's offices on Wednesday, March 8. Mr. R. Q. Hampton, M.H.K., Chairman of the company, presided.

The Chairman, in the course of his speech, said that this year again the directors were precluded from submitting any statement of accounts or review of the past twelve months' work of the company, and the business, therefore, was confined to the declaration of dividends and the election of directors and auditors. Before proceeding with these items he would like to express the thanks of the directors to the management and staff for their excellent work during 1943. Each year of the present emergency had added to the burdens placed upon the company's operations. The Manager, Mr. Sheard, had most capably met every situation that had arisen, and often the notice, if any, had been very short. He had been ably seconded by the company's traffic, engineering, permanent way, accountancy and audit departments and their respective personnel. The directors tendered them their cordial thanks and congratulated them on the efficiency of their work.

He had in the past claimed for this company a unique position in that it supplied a service which could not be given adequately by any other means of transport, and present circumstances fully proved it. Shareholders in recent years had suffered through decreased earnings and increased costs, but the undertaking had not been allowed to suffer. Vital requirements had been carefully maintained, and when the emergency arose the company was able to provide the needed service. It was the shareholders' lesser returns that made possible this contribution in time of national need, a contribution that he trusted would not be forgotten or made light of when war was over.

Until peace came, perhaps indeed much later than that, it would be impossible to assess the cost of replacement, reinstatement, abnormal depreciation and deferred maintenance due to the intensive demands of the present time. Earnings were not profits until these costs were fully met. This company had always placed its services to the island first, and if it was to continue to do so successfully it must be allowed to make financial provision for these contingencies and for reconstruction after the war. Otherwise the island as well as the company would suffer irreparable damage and loss.

The directors recommended a dividend of 5 per cent. on the preference shares, and a dividend of 2½ per cent. on the ordinary shares, payable on March 15.

The resolutions for the adoption of the report and for the payment of these dividends were duly seconded and carried.

Mr. A. J. Hogg and Mr. Cecil Teare were re-elected directors.

The resolution for the re-election of Messrs. Turquand, Youngs, McAuliffe & Co. as auditors of the company for the current year at a fee of 100 guineas was carried.

A vote of thanks was passed to the Chairman and directors, and the proceedings terminated.

London Midland & Scottish Railway Company Special General Meetings

Two special general meetings of the London Midland & Scottish Railway Company were held at Euston Station, London, on Monday, March 20. The Rt. Hon. Lord Royden, C.H., Chairman of the company, presided.

The Secretary (Mr. G. R. Smith) having read the Notice convening the meeting,

The Chairman said: Ladies and Gentlemen, this meeting is held in accordance with the Standing Orders of Parliament to submit for your approval the following Bills which are being promoted by the company:—

1. The London Midland & Scottish Railway Bill;
2. The London Midland & Scottish Railway (Canals) Bill.

The principal object of the London Midland & Scottish Railway Bill is to authorise the company to supply water from its Shropshire Union Canal to land or premises adjacent to the canal. For many years it has been the practice of the company and its predecessors to supply canal water to works near its canals if to do so would not interfere with navigation. The company now affords supplies to a large number of premises along the Shropshire Union Canal and revenue to the company from this source amounts to nearly £5,000 per annum. The power of the company to afford these supplies has been challenged in the Courts and, rather than embark on protracted litigation, it is thought expedient to apply to Parliament to place beyond all doubt the company's rights.

The Bill also provides that at least 21 days' notice shall be given to the company of intention to propose a person for the office of director, except in the case of a director retiring by rotation and of the election by the board of a director to fill a casual vacancy.

There are also provisions in the Bill enabling the company to destroy for salvage purposes out-of-date stock registers of its constituent companies and to alter the date to which the annual accounts of the company's savings bank are made up.

The second Bill, the London Midland & Scottish Railway (Canals) Bill, has two purposes: first, to close to navigation certain canals of the company, or portions thereof, and, secondly, to effect the transfer of a portion of the company's Huddersfield Canal to the Calder & Hebble Navigation Company. Railway companies which are owners of canals are under statutory obligations to maintain those canals in good working condition, whether or not there is any traffic passing. The company's undertaking includes a considerable number of canals with a total of more than 500 miles of waterway. Amongst these are canals (comprising some 230 miles of waterways) on which traffic has, in many cases, ceased.

Included among the canals to be closed is the greater part of the company's Huddersfield Canal. The remainder of this canal over which traffic still passes could be conveniently worked as part of the adjoining undertaking of the Calder & Hebble Navigation Company and the company has, with the approval of the Minister of War Transport, entered into an agreement with the Calder & Hebble Company for the transfer of the remainder of the canal. Parliamentary powers are needed to give effect to this agreement.

The Chairman then put, and the Secretary seconded, the resolutions approving the Bills; they were carried unanimously.

The Secretary then read the notice convening the second meeting.

The Chairman: Ladies and Gentlemen: This meeting is held to authorise an application to the Minister of War Transport for a warrant authorising the abandonment of the Monkland Canal and also for an Order releasing the company from all liability to maintain the canal. The Monkland Canal extends from Glasgow to Airdrie and is 13 miles in length. There has been no traffic over the canal since 1934 and there is no likelihood of traffic being resumed. The future of the canal has been discussed with the Glasgow Corporation in whose area the greater part of it is situate. The corporation has expressed its desire to acquire the site of the canal and an agreement is under negotiation. Effect can be given to this agreement only if the canal is first closed to traffic and your directors recommend that an application be made to the Minister of War Transport for this purpose.

The Chairman then read, and the Secretary seconded the resolution, which was carried unanimously.

Mr. W. J. Stevens: My Lord Chairman, may I congratulate you on conducting two meetings and getting them through with remarkable despatch and unanimity? We could desire the same despatch and unanimity at some of our annual meetings. If I am not ruled out of order, I should like to thank you most heartily, and I feel sure the shareholders would join with me in thanking you for your most explicit statement and declaration of policy with regard to our standard revenue, because as a man who has, unfortunately, had to follow your fortunes for well over 40 years, I realise that this is really our charter for the future, and we are very grateful to you for making it so clear.

The Chairman: Thank you very much.

(The proceedings then terminated)

Staff and Labour Matters

Railway Wages

The leaders of the National Union of Railwaymen, the Associated Society of Locomotive Engineers & Firemen, and the Railway Clerks Association, formally submitted their claim for an increase of 12s. per week in the war advance of railway salaried and conciliation employees at a meeting between representatives of the railways and representatives of the unions held in London on Tuesday, March 14. All three unions also submitted a claim that the war advance should rank for superannuation and pension purposes, and the National Union of Railwaymen and Associated Society of Locomotive Engineers & Firemen submitted further claims for two weeks' holidays with pay for staff in the conciliation grades, and for juniors working in adult positions to be paid the full amount of the war advance payable to adults. The railway representatives promised to give careful consideration to the submissions of the unions and to give their reply as early as possible.

The employees' side of the Railway Shopmen's National Council has also made a claim on behalf of railway workshop staff for an increase of 12s. a week in the existing war advance, and this claim was considered at a full meeting of the Railway Shopmen's National Council held in London on Wednesday, March 20, 1943. The railway representatives on the council promised to give careful consideration to the claims and to give their reply as early as possible.

The National Railway Electrical Council also met in London on March 21, when the employees' side of the council submitted claims on behalf of the railway electrical staff for an increase of 12s. in the war advance.

Questions in Parliament

Train Accommodation for Forces

Mr. W. Dobbie (Rotherham—Lab.) on March 8 asked the Parliamentary Secretary to the Ministry of War Transport whether he was aware of the complaints being made that members of His Majesty's Forces had to stand in corridors on long journeys because of the absence of third class accommodation, while seats were available in first class compartments; and whether the position had been made clear by the railway companies to their staff that members of the forces and other passengers should be permitted to occupy available first class seats on trains when the third class accommodation was fully taken up.

Mr. Noel-Baker: The railway staff has been given discretion to allow passengers with third class tickets to occupy seats in first class carriages without any extra charge when the third class carriages are seriously overcrowded. Mr. Dobbie will understand, however, that it is necessary to have regard to the requirements of passengers with first class tickets who may join the train later on its journey.

Inter-Communication between Train Compartments

Mr. W. W. Wakefield (Swindon—C.) on March 15 asked the Parliamentary Secretary to the Ministry of War Transport if he would give an assurance that all new and renovated passenger rolling stock would contain suitable communication between the guard and every compartment in order that the guard of a train or other qualified train attendant might make announcements to passengers, such as arrival at a station, thereby avoiding the acoustic and other difficulties which at present existed when a train arrived at a station.

Mr. Noel-Baker: Mr. Wakefield will appreciate that, with the shortage of labour and materials, it would be impracticable to carry out his suggestion at the present time, but I am glad to assure him that it will receive the fullest consideration when the renovation of passenger trains, and the construction of new rolling-stock, becomes possible again.

Coal Freight Rebates

Sir Frank Sanderson (Ealing—C.) on March 8 asked the Minister of Fuel & Power whether he could state, in regard to the suspension of coal freight rebates (Railway Freight Rebates Act, 1943) which related to freight rebates on export and bunker coal, the total amount of the appropriate proportion of railway rates relief as from July 1, 1943, which would have been available for rebates on coal traffic and had been paid to his department; and in what manner it had been used for the production or marketing of coal.

Mr. Tom Smith (Joint Parliamentary Secretary, the Ministry of Fuel & Power): The amount paid over up to February 29, 1944, is £1,012,343. This money has been used, as to £688,943 as a relief in respect of transport subsidies granted to facilitate the movement and marketing of coal and coke, and, as to £323,400, for the general purposes of the Coal Charges Account.

L.N.E.R. Staff Grades

Mr. J. E. Leverseed (Eddisbury—Commonwealth) on March 8 asked the Parliamentary Secretary to the Ministry of War Transport, whether he would state the number of men in the clerical and supervisory grades on the L.N.E.R. who were classified as redundant; in how many cases this redundancy was due to the recently changed form of organisation which passed the control of technical stores to the using departments; the number of new posts created by this change; whether he was satisfied that the fullest use was being made of this redundant staff; and that national interests and individual interests were not being sacrificed to departmental or other prejudices.

Mr. P. J. Noel-Baker (Parliamentary Secretary, the Ministry of War Transport) in a written answer stated: There are no redundant members of the staff in the clerical, supervisory or other grades of the L.N.E.R. I am informed that the reorganisation of the control of the technical stores of the L.N.E.R. has resulted in some staff being transferred with their work from the stores department to other departments. Up to the present, new posts for four males and three females have been created. Twelve male and two female posts have been saved and the persons concerned transferred to other departments which are under-staffed, and where they are fully employed, I have no reason to believe that the change of organisation is in any way contrary to national or individual interests.

London Underground Services

Sir Ralph Glyn (Abingdon—C.) on March 15 asked the Parliamentary Secretary to the Ministry of War Transport if he would arrange with the London Passenger Transport Board for a more frequent service of trains on the various underground railways in view of the altered conditions since the present restricted services were imposed and the need to divert travel from petrol vehicles whenever possible.

Mr. P. J. Noel-Baker (Parliamentary Secretary, the Ministry of War Transport): During the last two years, the train services of the London Passenger Transport Board have been substantially increased. During the peak periods, there are now the maximum number of trains that the lines will carry. The services at other times are a little less frequent than before the war, but the trains keep their full number of coaches, instead of being reduced in length, as they were then. Taken as a whole, the services now in operation are the maximum that can be operated with the present staff.

Return Tickets on L.P.T.B.

Mr. Bartle Bull (Enfield—C.) on March 15 asked the Parliamentary Secretary to the Ministry of War Transport if to save paper and time, he would consider introducing return tickets on the services operated by the London Passenger Transport Board and a ticket which would be good for a specified number of journeys within a given time.

Mr. Noel-Baker: The general introduction of return tickets on the road services of the London Passenger Transport Board would greatly complicate the work of the conductors and conductresses, since they would have to carry many additional sets of tickets. For this reason, I think that the balance of advantage is against the proposal made by Mr. Bull.

Mr. Bull: What about the Underground, and what about the answer to the second point?

Mr. Noel-Baker: There are return tickets on the Underground.

Mansion House Association on Transport

The annual luncheon of the Mansion House Association on Transport was held at the Connaught Rooms, London, W.C.2, on March 21. Mr. W. H. Gaunt, C.B.E., President, was in the chair.

The President, in welcoming the guests, said that the association tried to look on transport from the public standpoint and to make its criticisms well informed. He was pleased that this year was the silver jubilee of the Ministry of Transport, the Institute of Transport, and of *Modern Transport*. He hoped that they would live to see the golden jubilee of all three.

Colonel the Rt. Hon. J. J. Llewellin, M.P., Minister of Food, said that many ministries were grateful to the association for the help they had received in dealing with transport matters, from men associated with constituent firms; Mr. Gaunt had been for a year Director of Transport at the Ministry of Food. The Minister went on to refer to the many economies in transport which had been made on a voluntary basis, and which had been most valuable at a time of transport strain. The zoning schemes sometimes had meant a change of customers and a loss of established goodwill but 300,000,000 ton-miles had been saved, equal to 2,400 freight trains from Birmingham to London. On the transport of food by road 45,000,000 gallons of petrol had been saved.

Mr. Philip Runciman, General Council of British Shipping, said that he was an out-and-out private enterprise man, and he was convinced that the strength of this nation was in its shipping. Without an efficient mercantile marine this country would have been starved into submission, and, through the past five years the people of this country had wakened to a realisation of the part the mercantile marine was playing in this war. The Merchant Navy was vital to our economic prosperity. Shipping was our greatest export industry; shipping earnings in 1938 had topped the list at over £100,000,000. More than ever after the war we would

have to rely on our invisible exports to redress an adverse trade balance, and he was convinced that we should be increasingly dependent on our shipping earnings. The British mercantile marine had been built up by private enterprise, and the men who had created it were invariably self-trained in habits of clear thinking, able to make quick and bold decisions, and ready to take responsibilities. If these qualities were to be disregarded in deference to political ideologies of nationalisation, if the skilled work of inexperienced amateurs, if the inventiveness of and energy of private enterprise were to be chained to the treadmill of bureaucracy, we might as well resign ourselves to an irreparable decline in our position among the leading nations of the world. The task of a Government was to legislate, not to trade.

Sir Cyril Hurcomb, Director-General, Ministry of War Transport, said that probably of all major transport problems dealt with in the past 25 years there had been hardly one in which the counsels of Mr. Gaunt's association had not been sought. Members in that association were now feeling the full strain of the restrictions which were imposed on commerce, and which were inevitable in wartime. The whole effort of the Government was directed to seeing that only those things most needed were carried. It was not possible to follow commercial ideals.

Mr. A. Guinness, Chairman, British National Committee, International Chamber of Commerce, said that in America the relationship between Government and private enterprise was not as close as in this country. Here it had become a partnership. In America, the War Department had adopted the policy of calling in industrialists, telling them what was wanted, and leaving them to do it. The American business man had re-established himself again after the very difficult time he had gone through in the 'thirties. The system in the United States had led to a very great rise in costs, and there was no doubt that America was going to have many problems to face in the post-war era. He urged that the attitude businessmen of this country should adopt was not to go to the Government and say: "What shall we do?" but to get their plans ready and then go to the Government and say: "This is what we ought to do; what is your policy?"

Among the chief guests were:—

Sir Henry French (Permanent Secretary, Ministry of Food), Mr. A. Guinness (Chairman, British National Committee, International Chamber of Commerce), Sir Reginald Hill (Deputy Director-General, Ministry of War Transport), Mr. J. J. Hughes (Chairman, Traders Co-ordination Committee), Sir Cyril Hurcomb (Director-General, Ministry of War Transport), Mr. D. Lamb (Deputy Director, Food Transport), Colonel the Rt. Hon. J. J. Llewellin (Minister of Food), Mr. W. Mabane, M.P. (Parliamentary Secretary, Ministry of Food), Brigadier-General Sir H. Osborne Mance (Director, Canals, Ministry of War Transport), Sir Herbert Matthews (Past President, Mansion House Association on Transport), Mr. J. P. R. Maud (Second Secretary, Ministry of Reconstruction), Sir James Milne (Deputy-Chairman, Railway Executive Committee), Sir Harold Morris (President, Industrial Court), Mr. P. J. Noel-Baker, M.P. (Parliamentary Secretary, Ministry of War Transport), Mr. P. Runciman (Chairman, General Council of British Shipping), Canon F. W. Hassard Short (Chairman, Automobile Association), Major R. A. B. Smith (Deputy Chairman, Road Transport Organisation Joint Conference), Captain W. F. Strickland, M.P. (Parliamentary Committee, Mansion House Association on Transport), Mr. G. N. Wilson (Chairman, British Road Federation), Sir William Wood (President, Institute of Transport), Brigadier-General Sir J. M. Young (Chief Divisional Food Officer, London).

Notes and News

Institute of Transport.—The informal meeting of the Institute of Transport announced for March 28 has been cancelled.

Barsi Light Railway Co. Ltd.—The directors have declared a dividend of 2 per cent. actual in respect of the half-year ended September 30, 1943, on the ordinary stock, payable on April 20, 1944.

"Junction X."—A feature broadcast entitled "Junction X," which will pay tribute to the work during wartime of British railways and railwaymen, is to be given in the B.B.C. Home Service at 8 p.m. today (March 24).

Peruvian Corporation Limited.—Notice is given of a payment on April 1 to the debenture holders on account of interest the sum of £3 per cent., and that this payment will be made in full discharge of Coupon No. 97, representing the instalment of interest due October 1, 1938. The payment will be less tax.

Parana Plantations.—An extraordinary meeting of Parana Plantations Limited is to be held on March 31, at Winchester House, E.C.2, at 2.30 p.m., to consider a resolution that the company be wound up voluntarily, with Mr. Stuart Ranson Cooper as liquidator. On February 25, shareholders approved the proposals for the sale of the company's Brazilian assets, including practically the whole issued share capital of the San Paulo-Parana Railway.

Great Southern Railways Dealings.—Mr. Lemass, Eire Minister of Industry & Commerce, giving evidence in Dublin on March 12 before the tribunal inquiring into Great Southern Railways dealings prior to the publication of the reorganisation scheme, said there was no evidence of any leakage of information. There appeared to be no explanation for the movement in the price of shares or volume of transactions, except the improved financial position of the company, which was becoming a matter of public knowledge.

Assessment of Railways.—The Railway Assessment Authority announces that on February 25 it completed the Great Western Railway part of the third railway valuation roll which operates for the five rating years 1941 to 1946. It confirmed the cumulo net annual value of £1,631,068 for that undertaking and rejected a representation by the London County Council that this figure was inadequate. On February 24 and 25 the Authority began the hearing of representations with respect to the L.M.S.R. part of the third roll and this hearing will be resumed on March 24. The hearing of representations with regard to the L.N.E.R. part of the roll will take place on April 27 and 28 at the Middlesex Guildhall, Westminster.

Irish Railway Fares Increase.—Notice is given pursuant to the Railway & Canal Traffic Act, 1888, and to the Order of the Board of Trade thereunder dated January 25, 1889, that the Irish cross-border railways, namely, the County Donegal Railways Joint Committee and the following railway companies:—Dundalk, Newry & Greenore; Great Northern (Ireland); Londonderry & Lough Swilly; Sligo, Leitrim & Northern Counties; and Strabane & Letterkenny intend on April 1 to increase, subject to the statutory maxima, passenger fares by approximately 5 per cent. The increase will apply in respect of the portion of the journey over the cross-border lines to fares (*a*) between local stations in Eire and between stations in Eire and stations in Northern Ireland on the cross-border railways; (*b*) to through bookings between any of those railways; (*c*) to fares between stations in Eire on those railways and stations on the Belfast & County Down and the L.M.S.R. (N.C.C.); (*d*) to fares between all stations on the cross-border railways and stations on the Great Southern Railways.

Potteries Motor Traction.—The Potteries Motor Traction Co. Ltd. proposes to increase its capital from £600,000 to £635,000, by the creation of 35,000 ordinary £1 shares. At present the company has

British and Irish Railway Stocks and Shares

Stocks	Highest 1943	Lowest 1943	Prices Mar. 21, 1944	Prices Rise/Fall
G.W.R.				
Cons. Ord. ...	65½	57½	59	—
5% Con. Pref. ...	120½	108	116½	— 2
5% Red. Pref. (1950)	110½	106	108	—
5% Rt. Charge ...	137½	123½	129½	— 2
5% Cons. Guar. ...	135½	121⅞	127½	— 2
4% Deb.	118	107½	113	— 2
4½% Deb.	119	109⅞	115½	—
4½% Deb.	124½	116	121½	— 1
5% Deb.	138	127	131½	— 1
2½% Deb.	77	72½	74½	—
L.M.S.R.				
Ord.	34⅛	28	30½	— ½
4% Pref. (1923) ...	66½	58	59½	— 1
4% Pref.	80½	73	77	— 1
5% Red. Pref. (1955)	105¾	102	104½	—
4% Guar.	107	96½	102	— 1½
4% Deb.	107¾	103¼	106	— 1½
5% Red. Deb. (1952)	111¼	108	109½	—
L.N.E.R.				
5% Pref. Ord. ...	12⅞	7⅛	9½	— ⅛
Def. Ord.	5⅛	3⅛	4½	—
4% First Pref. ...	66½	57½	60	— ½
4% Second Pref. ...	36½	30½	32½	— ½
5% Red. Pref. (1955)	99⅛	93	97½	
4% First Guar. ...	102½	94	98	— 1½
4% Second Guar. ...	93½	85⅛	90½	— 2
3% Deb.	86⅛	78⅛	81½	— 1
4% Deb.	109⅞	101⅛	105	— 2
5% Red. Deb. (1947)	106½	102	104	—
4½% Sinking Fund Red. Deb.	108	103½	104½	—
SOUTHERN				
Pref. Ord.	80	72½	76½	— ½
Def. Ord.	26⅛	20⅛	24½	+ ¼
5% Pref.	119½	106⅛	115½	— 1½
5% Red. Pref. (1964)	114	106½	113½	—
5% Guar. Pref. ...	136	122	128½	— 1
5% Red. Guar. Pref. (1957)	117	109½	113½	—
4% Deb.	117½	106	111	— 3½
5% Deb.	137	126	130½	— 1
4% Red. Deb. (1962-67)	112	106½	109½	—
4% Red. Deb. (1970-80)	112	107	110½	—
FORTH BRIDGE				
4% Deb.	109	104⅞	105	—
4% Guar.	105	102½	103½	—
L.P.T.B.				
4½% "A"	125⅛	114	122½	— 1
5% "A"	133⅞	123	130½	—
3% Guar. (1967-72)	100½	97	99	—
5% "B"	124	114	121½	—
"C"	72	53	70	+ 3
MERSEY				
Ord.	34½	27	33½	—
3% Perp. Pref. ...	68	59½	69	+ 3
4% Perp. Deb. ...	104	102½	103	—
3% Perp. Deb. ...	83	78½	79	—
IRELAND				
BELFAST & C.D.				
Ord.	9	6	6½	— ½
G. NORTHERN				
Ord.	24½	16	19½	— 2½
Pref.	—	—	38	— 2½
Guar.	—	—	58	— 3½
Deb.	—	—	84	—
G. SOUTHERN				
Ord.	30	9½	48½	— 6½
Pref.	30	11	49½	— 4½
Guar.	64	26½	66	— 1½
Deb.	88⅛	51⅛	89½	— ½

§ ex-dividend

OFFICIAL NOTICES

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is 9.30 a.m. on the preceding Monday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

IT is desired to secure full commercial development in the United Kingdom of British Patent No. 535,222 which relates to "Shock Absorbing Devices," either by way of the grant of licences or otherwise on terms acceptable to the Patentee. Interested parties desiring copies of the patent specification should apply to STEVENS, LANGNER, PARRY & ROLLINSON, 5 to 9, Quality Court, London, W.C.2.

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unissued only 58,750 shares, and needs 90,784 for issue in connection with the proposed acquisition of Associated Bus Companies Limited.

West Yorkshire Road Car Co. Ltd.—This company is controlled jointly by the L.N.E.R. and L.M.S.R. Companies and by Tilling Motor Services Limited. In the year 1943 traffic receipts and other income, less operating, management, and general expenses amounted to £485,747 (£483,791). Fuel taxation and vehicle licences took £51,217 (£54,139), provision for deferred maintenance £6,500 (nil), provision for income tax and E.P.T. £272,074 (£268,864), directors' fees were £2,450 (£2,438), transfer to depreciation reserve was £31,112 (£38,040), and £25,000 (same) was put to reserve for contingencies. Net profit was £97,394 (£95,310), and adding £31,437 brought forward makes a total of £128,831. Dividend on the ordinary shares is again 10 per cent., tax free, absorbing £78,750, and the balance carried forward is £82,956.

Closing of Wick & Lybster Branch.—It is announced by the L.M.S.R. that the Wick & Lybster Branch will be closed for the conveyance of traffic by rail after the finish of work on Saturday, April 1. On and from Monday, April 3, passengers will not be booked for rail conveyance on this branch. There is a convenient bus service serving the area. Passenger train parcels, newspapers, and perishable passenger train traffic, such as fish, etc., will be conveyed between Wick and the stations on the branch by road motor vehicle working from and to Wick Station. Freight train traffic will also be conveyed between Wick and the branch-line stations by this means. Existing arrangements at Lybster regarding the collection and delivery of traffic between the station and the traders' premises will continue.

Institution of Mechanical Engineers.—At a general meeting of the Institution of Mechanical Engineers to be held at 5.30 p.m. on April 28, at Storey's Gate, London, S.W.1, there will be presented a paper entitled "The Application of Fabricated Construction to Machine Design," by F. Koenigsberger, Dipl.-Ing., A.M.I.Mech.E.

Institution of Electrical Engineers.—At an ordinary meeting of the Institution of Electrical Engineers to be held in the lecture theatre of the institution, Savoy Place, Victoria Embankment, London, W.C.2, at 5.30 p.m. on Thursday, March 30, two papers will be presented: "Restriking-voltage as a factor in the performance, rating and selection of circuit-breakers," by J. A. Harle, M.Sc., and R. W. Wild, and "The influence of resistance switching on the design of high-voltage air-blast circuit-breakers," by H. E. Cox and T. W. Wilcox.

South Indian Railway Co. Ltd.—The directors announce that the terms proposed by the Secretary of State for India for the termination of the company's working contract on March 31, 1944, were approved by the stockholders at a meeting held on February 4. At a meeting convened for April 4 a resolution will be submitted for the voluntary winding up of the company and for the appointment of Sir Ernest A. S. Bell, C.I.E., and Mr. Charles A. Muirhead, C.I.E., as liquidators at a remuneration of £3,000. If this resolution is duly passed it is hoped that early in April the liquidators will be able to make an initial distribution to the stockholders at the rate of £110 for each £100 of capital stock.

L.N.E.R. Stockholders' Association.—Mr. Austin F. Kavanagh is Chairman of the recently formed L.N.E.R Stockholders' Association, and Mr. K. Scott Adie is Vice-Chairman. Sir Charles Stuart Williams is Chairman, and Mr. Ernest Short General Secretary, of the British Railway Stockholders' Union. On the occasions of the recent annual meetings the resolutions requesting the boards to seek revision of the railway control agreement, was moved in the case of the L.M.S.R. meeting by Mr. Scott Adie, and in the case of the L.N.E.R. meeting by Mr. Austin F. Kavanagh. At the G.W.R. meeting Mr. Ernest Short moved the resolution, and also at the Southern meeting. Although the resolutions were in almost identical terms, those moved by Mr. Short were on behalf of the Railway Stockholders' Union.

Forthcoming Events

March 24 (*Fri.*).—Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, 5.30 p.m. "Surface finish," introduced by Mr. J. F. Kayser. Informal meeting.

March 30 (*Thurs.*).—Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2, 5.30 p.m. "Restriking-voltage as a factor in the performance, rating and selection of circuit-breakers" by J. A. Harle and R. W. Wild, and "The influence of resistance switching on the design of high-voltage air-blast circuit-breakers" by H. E. Cox and T. W. Wilcox. Ordinary meeting.

Left: Lord Rothes, Director of Tyres, Ministry of Supply, Mr. E. J. Missenden, General Manager, Southern Railway, and Colonel Eric Gore-Browne (Chairman of the Southern Railway Company), Controller of Rubber, Ministry of Supply, inspecting a tyre economy exhibition coach recently at Waterloo. Right: An internal view of the coach, which has been fitted out by the Ministries of Supply and War Transport

Railway Stock Market

Preparations for London's impending "Salute the Soldier" savings drive have again been an important factor limiting business in Stock Exchange markets. Nevertheless, the general undertone was satisfactory. The war news assisted sentiment, and British Funds showed little change on balance. Moreover, in the industrial and other sections individual features developed, and because of the firmness with which many securities are held, prices tended to show ready response to any small improvement in demand.

The home railway market experienced comparatively quiet conditions. There was an easier tendency in prior charges, and in some instances they were a point down, but this was attributed to absence of the better demand recently in evidence. When markets become active, it seems not unlikely that home railway debentures, guaranteed and senior preference stocks will attract further demand, bearing in mind that yields still compare favourably with those on stocks in other sections of the Stock Exchange carrying similar high-class investment merits. With regard to junior stocks the small declines shown towards the end of last week were regained in most instances, but there was little indication that the large yields were attracting attention. Nevertheless, they are so much out of line with the return on other securities of the equity or ordinary class that it would seem that over a period there should be reasonable scope for appreciation in prices.

The prevailing view is that there is little likelihood of revision of the wartime control agreement, despite the undisputed fact that it bears unfairly, particularly as to L.N.E.R. preferred and deferred, which as pointed out in these notes, are the only equity securities of a company playing a vital part in the war effort that are precluded from receiving any distribution during the period of the war. Even if the endeavours of stockholders and others to secure revision of the control agreement do not meet with the desired object, their efforts will not be entirely wasted if they help in keeping before the public the efficiency of the railways as well as the moderate dividends received by stockholders when compared with the wartime earnings. The White Paper on railway earnings, expected in a few weeks, will emphasise this because there seems little doubt that the figure for 1943 will be over the £100 million level or well above twice the amount received by the railways by way of the fixed wartime rental.

Great Western ordinary eased, but later recovered to 59 and was unchanged as compared with a week ago. On the other hand, the 4 per cent. debentures moved back a point to 114, and the guaranteed stock declined a similar amount to 128, and the 5 per cent. preference was 116½, compared with 118 a week ago. L.M.S.R. ordinary at 30¾ was quite well maintained on balance; but the 1923 preference eased further from 60¼ to 59¼, and the senior preference from 77⅛ to 77, while the guaranteed stock was 102½. Elsewhere, L.N.E.R. second preference was 31⅞, as compared with 32⅛ a week ago; the first preference was 59¾, compared with 60½. L.N.E.R. first guaranteed declined from par to 98, and the second guaranteed from 92½ to 90¼. Southern deferred eased, but later rallied to 24½, which compared with 24⅜ a week ago. Southern preferred at 76½ was unchanged on balance. London Transport "C" has risen further from 67½ to 70 on assumptions as to scope for higher dividends after the war.

There has been a good improvement in Argentine railway securities, which embraced ordinary and preference stocks as well as debentures. Best gains were recorded in the debentures, and on balance ranged up to several points. B.A. Gt. Southern ordinary moved up from 12¼ to 13⅜, the 5 per cent. preference from 25 to 26½, and the debentures from 56½ to 60½. Elsewhere, San Paulo ordinary was 49½. Canadian Pacifics were again 15½.

SAN PAULO (BRAZILIAN) RAILWAY CO. LTD.—The directors announce that the date of the annual general meeting has been provisionally fixed for Tuesday, May 23, 1944, subject to the receipt of final accounts and the completion of the audit. In the meantime, it has been decided to pay on April 17 a dividend of 5 per cent. on the 5 per cent. non-cumulative preference stock in respect of the year 1943, such dividend payable to the stockholders on the register at this date.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ending	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1941/2	No. of Weeks	Aggregate traffics to date: Totals 1942/3	Aggregate traffics to date: Totals 1941/2	Aggregate traffics to date: Increase or decrease	Shares or stock	Prices: Highest 1943	Prices: Lowest 1943	Prices: Mar. 21, 1944	Yield % (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chile) & Bolivia	834	12.3.44	24 600	+ 2 550	11	317 2 0	294,210	+ 23 020	Ord. Stk.	15⅝	10	11½	Nil
	Argentine North Eastern ...	753	11.3.44	13,812	+ 3,300	37	525,258	452,184	+ 73,074	,,	7⅞	5	5	Nil
	Bolivar	174	Feb., 1944	5 258	+ 739	9	9,947	9,811	+ 136	6 p.c. Deb.	22½	18	18½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	23½	19	18	Nil
	Buenos Ayres & Pacific ...	2,807	11.3.44	127 380	+ 8 590	37	3,768,420	3,589,440	+ 178,980	Ord. Stk.	8½	5¼	6½	Nil
	Buenos Ayres Great Southern	5,080	11.3.44	221 460	+ 44.760	37	6.555,420	5,922,960	+ 632 460	Ord. Stk.	17½	9¼	14	Nil
	Buenos Ayres Western ...	1,930	11.3.44	64.200	+ 8.640	37	2.023,180	1,987.020	+ 41.160	,,	16	9⅞	12½	Nil
	Central Argentine	3,700	11.3.44	170,376	+ 37,098	37	5,433,292	4,888,005	+ 550,2s7	,,	10⅜	6¼	9	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	4⅜	3	4	Nil
	Cent. Uruguay of M. Video	972	4 3 44	30.889	— 7 781	36	1.195,482	967,350	+ 228,132	Ord. Stk.	7⅜	4½	5	Nil
	Costa Rica	262	Jan., 1944	22 665	+ 6,0 8	29	152,859	96,556	+ 56.303	Stk.	16	12½	15	Nil
	Dorada	70	Feb 1944	21,672	+ 2,272	9	47,692	39,990	+ 7 702	1 Mt. Db.	96	92	93½	6¼
	Entre Rios	808	11.3.44	16,008	+ 684	37	723,318	656,988	+ 66 330	Ord. Stk.	9	5½	6	Nil
	Great Western of Brazil ...	1,030	11.3.44	24,000	+ 6,300	11	242,000	17.,400	+ 63,600	Ord. Sh.	59/9	24/-½	23/9	Nil
	International of. Cl. Amer.	794	Dec., 1943	$696,368	+ $50 157	52	$7,285,649	$6,200,530	+ $1,085,119	—	—	—	—	—
	Interoceanic of Mexico ...	—	—	—	—	—	—	—	—	1st Pref.	2⅜	1¼	1½	Nil
	La Guaira & Caracas... ...	22¼	Feb., 1944	7,615	— 1,030	9	14,255	18,080	— 3,825	5 p.c. Deb.	90	80	88½	Nil
	Leopoldina	1,918	11.3.44	41.248	+ 6, 08	11	440,655	326,382	+ 114,273	Ord. Stk.	⅞	4	5½	Nil
	Mexican	483	7.3.44	ps. 403,500	+ ps. 14,100	10	ps.3,735,300	ps. 3,024 500	+ ps. 760.8 0	Ord. Stk.	1⅜	¾	¾	Nil
	Midland Uruguay	319	Dec., 1943	18,039	+ 1,788	26	102,490	82,154	+ 20,336	—	—	—	—	—
	Nitrate	382	29.2.44	11,240	+ 6,283	9	38,370	23,298	+ 15.072	Ord. Sh.	83/9	71/3	70/-	Nil
	Paraguay Central	274	10.3.44	$48,392	+ $8.642	11	$1,844,687	$1,423,860	+ $420,827	Pr. Li. Stk.	75	51¼	69	8⅞
	Peruvian Corporation ...	1,059	Feb., 1944	98,853	+ 15,445	35	8 7,484	666,842	+ 180,642	Pref.	17⅞	10¾	10	Nil
	Salvador	100	Jan., 1944	c 193,000	+ c 16,000	29	c 796,000	c 609,000	+ c 187,000	—	—	—	—	—
	San Paulo	153½	—	—	—	—	—	—	—	Ord. Stk.	71	57	49	4¼
	Taltal	160	Feb., 1944	4,560	+ 2,065	36	45,270	36,911	+ 8,359	Ord. Sh.	37/6	20/-	17 6	Nil
	United of Havana	1,301	11.3.44	77,686	+ 6,379	37	1,894,987	1,763,506	+ 131,481	Ord. Stk.,	8 1/32	3¼	3	Nil
	Uruguay Northern	73	Dec. ,1943	1,568	— 117	25	8,697	7,910	+ 789	—	—	—	—	—
Canada	Canadian Pacific	17,034	14.3.44	1,168,800	+ 165,200	11	11,859,200	9,940,600	+ 1,918,600	Ord. Stk.	18	13⅞	15½	Nil
India†	Barsi Light	202	Jan., 1944	20,625	— 4,170	43	212,025	175,313	+ 36,712	—	—	—	—	—
	Bengal-Nagpur	3,267	Ja .. 1944	1,030.425	+ 13,425	43	10.1 8,350	9,098,625	+ 1,084,725	Ord. Stk.	104½	101¼	105½	3
	Madras & Southern Mahratta	2,939	20 2 44	320,100	+ 22,796	40	9,095,760	7,718,629	+ 1,377,131	,,	110	106	109	6
	South Indian	2,349	20.12.43	19?,41?	+ 24,449	37	5,321,558	4,562,445	+ 750,113	,,	105¼	101½	109	3§
Various	Egyptian Delta	—	10.2.44	13,168	+ 4,021	46	524,210	403,895	+ 120 315	Prf. Sh.	6 1/16	2⅞	7	Nil
	Manila	—	—	—	—	—	—	—	—	B. Deb.	45	32	40	8¾
	Midland of W. Australia ...	277	Jan., 1944	27,277	— 7 762	29	223,921	225,367	— 1,446	Inc. Deb.	101	93	100½	6
	Nigerian	1,900	30.12.43	68,456	+ 7,866	26	1,933,466	1,833,420	+ 160,046	—	—	—	—	—
	South Africa	13,291	5.2.44	906,730	+ 63,914	4?	37,522,295	34,935,498	+ 2,586,797	—	—	—	—	—
	Victoria	4,774	Nov, 1943	1,335,935	— 64,116	—	—	—	—	—	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of ⅛ Argentine traffics are given in sterling calculated @ 16⅛ pesos to the £
† Receipts are calculated @ 1s. 6d. to the rupee § ex dividend